


Academic Catalogue
1986-1988

CLARK UNIVERSITY



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The following listing is intended as an illustration of courses and programs that are typically offered or have been offered recently at Clark. Inclusion in this listing does not constitute a promise or guarantee that the course or program will be available in a particular semester or academic year. Rather, in each semester a wide selection of courses from this catalogue will be offered. From time to time new courses, curricula, or instructors may be added or changed. Please consult the *Class Schedule* and *Addenda to the Class Schedule* published by the Registrar's Office for a definitive listing of the courses and instructors in each term.

Clark University is accredited by the New England Association of Schools and Colleges, which accredits schools and colleges in the six New England states. Membership in the Association indicates that the institution has been carefully evaluated and found to meet standards agreed upon by qualified educators.

It is the policy of Clark University that each individual, regardless of race, color, sex, sexual orientation, religion, national origin, age, or handicap, shall have equal opportunity in education, employment, or services of Clark University. The University encourages minorities, women, Vietnam Veterans, the handicapped, and persons between 40 and 70 years of age to apply.

Clark University

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This catalogue is published by the Clark Communications Office.

Academic Calendar

1987-88

FALL SEMESTER

Saturday, August 29

Start of orientation for new students

Sunday, August 30 - Monday, August 31

Orientation continues

Tuesday, September 1

Registration for undergraduate and graduate students

Wednesday, September 2

First day of classes

University Monday *

Monday, September 7

Labor Day - A Holiday

Friday, September 18 - Sunday, September 20

Centennial Convocation and Parents Weekend

Thursday, October 22

Midterm break begins after last class

Monday, October 26

Classes resume

Monday, November 9 - Friday, November 20

Spring advanced registration for all continuing undergraduates

Wednesday, November 25

Thanksgiving vacation begins after last class

Monday, November 30

Classes resume

Wednesday, December 9

Last day of classes

Thursday, December 10 - Sunday, December 13

Reading days

Monday, December 14 - Friday, December 18

Fall Examinations

Friday, December 18

Winter vacation begins after last examination

* University Monday: Students and faculty follow Monday class schedule.

SPRING SEMESTER

Monday, January 4

All fall semester grades due at the Registrar's Office

Monday, January 11

Registration for all undergraduates and all graduate students

Tuesday, January 12

First day of classes

Friday, March 4

Spring vacation begins after last class

Monday, March 14

Classes resume

Monday, April 4 - Friday, April 15

Fall advance registration for all continuing undergraduates;

Senior clearance for undergraduates to be awarded degrees

5/15/88

Friday, April 15

Last day for graduate students to apply for degree dated 5/15/88

Friday, April 15

Last day for departments to make departmental honor decisions for degrees to be awarded 5/15/88

Monday, April 25

Last day of classes

Tuesday and Wednesday, April 26-27

Saturday and Sunday, April 30-May 1

Reading days

Thursday and Friday, April 28-29

Monday through Wednesday, May 2-4

Spring examinations

Thursday, May 5

All grades for graduating seniors due at the Registrar's Office

Sunday, May 15

Commencement

Monday, May 16

Spring grades for all continuing students due at the Registrar's Office

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About Clark University

A teaching and research institution founded in 1887, Clark is the oldest graduate institution in New England and the second oldest in the nation. The undergraduate college, which opened in 1902, has been heavily influenced from the start by the academic values and rigor of the Graduate School. The rich heritage of that scholarship is the foundation on which today's scholars, teachers, and students are building.

Clark was established chiefly through the efforts of two men: founder Jonas Gilman Clark, the sagacious Worcester-area native and merchant for whom the University is named, and G. Stanley Hall, the prominent psychologist who served as Clark's first president and helped build the University's faculty and reputation. Jonas Clark envisioned a college for New England young men with limited financial resources. G. Stanley Hall saw the need in the United States for institutions whose sole concern would be graduate study and research. Today, a century after its founding, Clark shows the influence of both visions for the institution.

A private, coeducational, liberal arts university with Graduate Schools and a College of Professional and Continuing Education, Clark continues to offer the intellectual resources of a respected graduate University within the context of a small, New England college. In the course of its history, the University has extended its

influence through professional journals—including *Economic Geography*—and professional societies, including the American Psychological Association and the American Physical Society, both founded at Clark. Many internationally known scholars have worked, taught, and lectured at Clark. The names—and accomplishments—of some of these scholar/teachers are well known beyond the world of academe: Sigmund Freud, whose only visit to the United States was for a series of Clark lectures; Robert H. Goddard, whose liquid-fueled rockets made him “father of the space age”; Hudson Hoagland and Gregory Pincus, two of those credited with research that led to the development of the birth control pill.

Other Clark affiliates who became renowned for pioneering work in their specific fields include: Albert A. Michelson, the first American Nobel laureate in science; Franz Boas, a major influence on American cultural anthropology; George Hubbard Blakeslee, a pioneer in the field of international relations. The wide-ranging accomplishments of Clark’s scholars and students have helped the University to leave its mark on the face of the earth (explorer Paul Siple, who held a Clark Ph.D. in geography, named a mountain range in the Antarctic for his professors) and on the face of the moon (where a crater is named after Dr. Goddard).

The Robert Hutchings Goddard Library, with a research collection of 500,000 volumes including 60,000 microform volumes, 240,000 monograph titles, and 2,300 periodical titles, is at the academic and physical heart of the University. Also, Clark’s newer facilities include fully equipped microcomputer labs; the University Computer Center; and the Arthur M. Sackler Sciences Center, an \$8 million teaching and research complex opened in September 1984. Campus facilities—some recently remodeled—are used for theater, music, and dance, as well as art exhibitions. A student athletic center offers facilities for virtually every sport and has a competition-size swimming pool. Campus buildings range from modern dormitories to Victorian era academic and administrative buildings.

Clark features close relationships among students, faculty, and administrators; exceptionally strong interaction between graduate and undergraduate programs; and unusual opportunities for independent study. Intimate seminar and laboratory settings, student participation in faculty research projects, and a dedicated, inquisitive, intellectual environment encourage Clark students to hold fast to the University’s tradition of academic excellence.

The Undergraduate College

The role of Clark University in undergraduate education is that of a small college dedicated to advanced learning within the context of a university. The University's emphasis upon intellectual and scholarly achievement and the extensive resources of its nationally recognized Graduate School provide unique advantages for the college and its students.

An undergraduate education at Clark should have three elements: First, it should provide students with deep and extensive involvement with a specific field of study so that each student can experience the meaning of intellectual mastery and can analyze problems in sufficient detail to know the real complexity of things; second, it should develop the broad appreciation of our heritage, and that of other cultures, that is necessary to the liberally educated person; and third, it should assist students in developing intellectual skills that suit them for a productive and active life.

To accomplish these goals, Clark has adopted the university-college concept as the ideal toward which all undergraduate academic planning and program development should be directed. The university-college concept seeks to integrate graduate and undergraduate education, developing in students intellectual competence, personal maturity, and skills in analysis, communication, and critical thinking. Programs are structured so that students assume increasing responsibility for their own learning, often culminating in research projects with senior faculty.

The foundation of the university-college is the Program in Liberal Studies, a structured set of courses designed to: • supplement introductory-level work in the incoming student's proposed field, • acquaint the student with skills in critical thinking and knowing that are essential for self-directed learning, • provide a framework within which a student can select an organized pattern of study, • and provide a broad introduction to liberal and lifelong learning. The Program in Liberal Studies has two components: critical thinking courses and perspectives courses.

- I. *Critical Thinking*: Every course in the University involves work in critical thinking. However, two types of courses place special emphasis on the cultivation of skills in this area. Each student is required to pass two courses, one from each of these areas:

A. *Verbal expression*: Courses offered in many different disciplines that place special emphasis on the relationship between writing and critical thinking within that discipline.

B. *Formal analysis*: Courses offered in several departments that place special emphasis on logical and algebraic modes of thinking.

II. *Perspectives*: Perspectives courses are designed to encourage breadth and to define the principal ways of knowing in various fields of learning. Students must successfully complete courses in at least five of the six categories, each course from a different academic department.

1. *Aesthetic*: *Aesthetic perspective* courses give primary emphasis to artistic expressions of the imagination and to the perception, analysis, and evaluation of form. These courses are designed to enhance the appreciation and understanding of the arts.

2. *Comparative*: *Comparative perspective* courses introduce the methodologies and modes of thinking encompassed by the social sciences.

3. *Historical*: *Historical perspective* courses build the capacity to understand the contemporary world in the larger framework of tradition and history. Courses are broad in scope and holistic rather than thematic in approach, introducing students to methods of history and to the ways historians think critically about the past, present, and future.

4. *Language/Culture*: The objective of courses within the language/culture perspective is to induce students to reflect upon the reciprocal relationships between languages and cultures. A year-long introductory language course may in some cases be used to meet this requirement. In addition, several departments including the Department of Foreign Languages and Literatures offer one-semester courses that provide this perspective.

5. *Natural Scientific*: *Scientific perspective* courses teach the principal methods and results of the systematic study of the natural world. Courses focus on methods of scientific study (observational/experimental experiences of natural phenomena) with a laboratory or demonstration component as an integral part to ensure actual exposure to natural phenomena and student experience of the result of scientific study.

6. *Values*: *Values perspective* courses study the dimension of value in all domains of life and learning, asking the moral question, "What ought we to do?"

Each perspective is important in the development of a balanced education. Therefore, we recommend that students do course work in each of the areas as part of a balanced liberal arts program. A list of the courses in each perspective is available each semester during registration.

A major at Clark involves study in one of the various departmental or interdepartmental programs of the college and results in the bachelor of arts degree. The undergraduate major is a program of study anchored in a particular discipline but specifically structured to include courses in related disciplines. This concept recognizes that breadth of knowledge must be maintained and achieved concurrently with specialization. Particular attention is placed on the interrelation of the major programs within the University and on early research opportunities.

A major consists of from 12 to 19 courses taken from those designated by a department. No department may require a student to take more than 19 courses in a major, but a student may take more than 19 courses if he/she meets the other University requirements for graduation.

Academic Programs

Majors are offered in art (art history, studio arts, or fine arts), biology, chemistry, economics, English, foreign languages (French, German, Spanish, romance languages, or a self-designed combination), geography, government and international relations, history, mathematics, music, philosophy, physics, psychology, sociology, screen studies, and theater arts. Interdisciplinary majors are offered in ancient civilization; biochemistry; business/management; comparative literature; computer science; international development and social change; and environment, technology and society. Formal concentrations are offered in American studies, communications, education, Judaic studies, neuroscience, and women's studies; in addition, courses are offered in anthropology, astronomy, classics, geology, linguistics, and Russian, but departmental majors for bachelor degree candidates are not available in these fields. Detailed descriptions of all majors and programs can be found under the departmental listings.

Students can design their own majors with the advice of an advisory committee of three faculty members. Self-designed majors must be approved by the dean of the college and coordinated through the Academic Advising Center. Self-designed majors also must include a balance between introductory and advanced courses and be approved no later than the start of the first semester, junior year.

INTERDISCIPLINARY DEPARTMENTAL MAJORS

BIOCHEMISTRY AND MOLECULAR BIOLOGY

The biochemistry and molecular biology major at Clark provides a comprehensive foundation for work in this contemporary discipline. The program is suitable for students who want to (1) pursue graduate studies in the field, (2) enter medical school with a strong background in a basic science, or (3) take laboratory or other science-related positions after graduation. For more information, refer to the departmental listing.

BUSINESS/MANAGEMENT

Two options are available to undergraduates interested in a business/management program:

1) *The Business Management Major.* Students interested in a management career in a profit or nonprofit organization (business, government, education, healthcare delivery systems, religious institutions, etc.), and who wish to explore job opportunities after graduation, deferring their graduate studies, should consider majoring in business/management. The program draws upon the broad liberal arts distribution requirements, integrating them into a program that is practical as well as broadly educational. For more information, refer to the management listing.

2) *The Five-Year B.A./M.B.A. Program.* For students who plan to pursue a master in business administration after their undergraduate work, this program offers an opportunity for accelerated graduate study. During their senior year, a select group of students who meet the program requirements finish their major requirements and are also permitted to enroll in graduate management courses, thereby enabling them to complete the M.B.A. in one year beyond the undergraduate degree, rather than the usual two years. Five-year B.A./M.B.A. students do their B.A. work in a field other than business/management (e.g., economics, psychology, government) and take related courses or electives to prepare them for graduate work in the senior year. They receive their B.A. after the senior year and the M.B.A. after the fifth year. For more information, refer to the management listing.

In addition to these programs, the Graduate School of Management offers a Master of Business Administration Program and a Master of Health Administration Program, which is offered in conjunction with the Department of Family and Community Medicine of the University of Massachusetts Medical School. Students may enroll in either program on a part- or full-time basis. For more information, refer to the management listing.

COMPARATIVE LITERATURE

This major allows the student of literature to transcend the boundaries of any one national literature, period, or genre. Comparative literature students are encouraged to combine such areas as philosophy, visual and performing arts, psychology, and history with their specific interests in language and literature. For more information, refer to the departmental listing.

COMPUTER SCIENCE

The computer science major has been designed for the education of computer scientists with a solid background in mathematics and significant work in a related area. Students may concentrate in various areas of computer science. For more information refer to the listing for the Department of Mathematics and Computer Science.

INTERNATIONAL DEVELOPMENT AND SOCIAL CHANGE

The Program for International Development and Social Change focuses on questions of equity, growth, and development at a time when Third World countries are exerting increasing influence in the world's economic, political, and social systems. Intended to serve students from the developing world and the United States, the program provides a forum for diverse perspectives. Its hallmark: a unique combination of academic training and field research. Not only do students become aware of broad issues in international development, but they are trained in the basic skills of resource management and social and economic analysis. Many prepare for careers as planners, managers, and educators in public and private organizations that deal with the world's developing nations; others choose further study in graduate and professional schools. For more information, refer to the departmental listing.

ENVIRONMENT, TECHNOLOGY AND SOCIETY

Clark is one of a few universities in the country to offer an undergraduate major in the interdisciplinary field of environment, technology and society. The Environment, Technology and Society (ETS) Program is designed for students who hope to contribute to the solution of complex societal problems such as environmental protection, energy policy, technological hazards, and risk analysis. Degree requirements emphasize a firm grounding in natural science

coupled with considerable exposure to social science and public policy perspectives, both derived from coursework in traditional departments.

The ETS Program offers some thirty problem-oriented and methodological courses and a variety of special projects and internship experiences, often in conjunction with ongoing faculty research. ETS courses and projects serve not only ETS majors but also other students taking ETS courses as electives. The program also offers an integrated B.A./M.A. degree option, which can be pursued by ETS majors and majors in traditional disciplines. Students from outside Clark may pursue M.A. or self-designed Ph.D. programs in environmental affairs or in technology assessment and risk analysis. For more information on the ETS major and related advanced degree programs, consult the departmental listing or the ETS Office.

INTEGRATED UNDERGRADUATE-GRADUATE PROGRAMS

To help bridge undergraduate and graduate education, Clark has established several integrated programs that allow students to complete requirements for bachelor's and master's degrees at an accelerated pace. Because undergraduates are granted admission to these special programs before receiving their undergraduate degree, they can begin to fulfill advanced degree requirements during their junior and senior years.

Each bachelor's/master's degree program is career-oriented and spans several disciplines; each provides participants with the knowledge and skills needed for entry-level professional positions, and normally covers a three-year span, beginning in the junior year and leading directly to a master's degree. The bachelor's degree is awarded en route to the master's. The programs provide students with the knowledge and skills to enter a profession directly or to continue in a Ph.D. program. *Formal application for admission to these programs is required at the end of the sophomore year.* Transfer students applying for these programs should direct their inquiries to the Admissions Office.

The University has approved programs of this type in environment, technology and society; geography; international development and social change; management; and public administration. In addition, the School of Geography offers a seven-year B.A./Ph.D. program, open to a limited number of highly qualified students.

SPECIAL OPPORTUNITIES FOR STUDY

THE EXTENDED UNIVERSITY

Since Clark is a member of the Worcester Consortium for Higher Education, students may enroll for one course each semester at Anna Maria College, Assumption College, the College of the Holy Cross, Worcester Polytechnic Institute, Worcester State College,

University of Massachusetts Medical School, or Becker, Quinsigamond, and Central New England Colleges.

Over fourteen thousand students have cross-registered under the consortium arrangement since 1968. Through the "extended University" Clark students immediately have available to them increased programs and course options. All of this is available at no extra charge to students.

Students from Holy Cross, Worcester Polytechnic Institute, and Clark University have worked together on a water pollution project; consortium students have been involved in a lead-paint testing program; engineering students from Worcester Polytechnic Institute, University of Massachusetts Medical School, and Quinsigamond Community College have worked with Clark students as a research unit for the Worcester Department of Public Health to conduct an infectious disease study. A health studies option, which arranges student internships in health care organizations and internships with research scientists in laboratory settings, is available through the "extended University" as defined by the Worcester Consortium. A music option also is available to stimulate intercollegiate participation in performing groups, to encourage cross-registration in music courses, and to make available concentrated study for students with extensive music backgrounds. Courses taken at consortium institutions should not duplicate those taught at Clark. Approval of the department chair or, when necessary, the dean of the college is required. Students enrolled in the day college may not enroll independently at other consortium institutions and receive Clark credit. To help students select cross-registration courses, the Consortium Office compiles a master course list by subject. This list appears prior to registration and is available in the Academic Advising Center.

CONSORTIUM GERONTOLOGY STUDIES PROGRAM

The Worcester Gerontology Studies Program functions as part of the Worcester Consortium for Higher Education. This program aims at developing an interest among undergraduate students of the consortium in the field of gerontology. It tries to stimulate the development of new courses in the field of aging—and to generate a greater emphasis on the problems of aging in general courses—to improve and enrich the available curriculum relating to gerontology. The main elements of the program are courses, internships, career planning, and a gerontology certificate.

A variety of courses related to aging are available among consortium colleges and exemplify the multidisciplinary nature of gerontology as a field of study. Contacts with a variety of agencies in the community have been developed in order to place and supervise students in internships with the elderly. To enhance support and supervision of the internship experience, the program organizes in

ternship seminars and workshops. These address common issues and concerns of student interns and enable students to learn from their peers.

Placements for internships can be in a variety of settings: nursing homes, day care centers, family service associations, home care corporations, neighborhood centers, councils on aging, retirement programs, health services, and hospitals. Roles can be as varied as counselling, visiting, occupational and physical therapy, legislative assistance, advocacy, administration, and others.

For further information about the Gerontology Studies Program, contact: Benjamin Holmes, Coordinator, Consortium Gerontology Studies Program, UMass Medical School, Center on Aging, 55 Lake Avenue North, Worcester, Massachusetts 01605, (617) 856-3084 or, at Clark, contact Andrea Walsh, Department of Sociology, 793-7230, 793-7243.

WRITING AT CLARK

Emphasizing the need for writing throughout the curriculum, Clark offers interdisciplinary, departmental, and special Writing Center programs. The required Verbal Expression Program offers courses in several disciplines, including art; English; geography; history; linguistics; philosophy; screen studies; and environment, technology and society. In many of these courses, class work is supplemented by peer writing groups. In addition to the required Verbal Expression Program, departments such as English, History, and Biology offer courses in basic, intermediate, and advanced expository writing as well as in science, social science, and creative writing. Supplementing the curriculum, Clark's Writing Center provides individual tutoring and noncredit workshops for all interested students. Writing Center offerings are not limited to remedial work, but are flexibly designed to help students at all levels achieve clear, correct, graceful writing.

DIRECTED READINGS AND SPECIAL PROJECTS COURSES

Most departments offer directed readings or special project courses, which may be entered with the permission of the instructor concerned. Directed Readings courses comprise a sequence of structured readings on a given topic approved and directly supervised by the instructor. Special Projects courses involve independent research by the student on a particular problem, as in laboratory work or field study. Both types of courses are offered for variable course credit but not to exceed a full course except by petition to the College Board. Students may take up to two full course credits in Directed Readings, Special Projects, or some combination of the two in a given one-semester period. There is no limit on the total number of such courses that may be counted toward the B.A. degree.

NONTRADITIONAL EXPERIENCES

Academic experiences outside the normal curriculum (e.g. internship experiences, off-campus research, study at nonaccredited institutions) are sometimes eligible for course credit. To qualify, an experience must involve a significant extension, embodiment, or illustration of previous or concurrent systematic academic work. It must take place under competent supervision, and the learning involved must be formally evaluated by a Clark faculty member. The goals and structure of the experience must be agreed to by the instructor and the student *prior* to the beginning of the experience. Course credit will not be given for work that duplicates previous coursework or other prior educational experiences. Internship experiences are graded pass/no record unless deemed exceptional after review by the dean of the college.

INTERNSHIPS

The Clark University Internship Program offers qualified students the opportunity to spend a semester working off campus, full or part time, as an extension of the academic curriculum. Having undertaken sufficient coursework in a related discipline, the student may choose from a large number of agencies offering internship placements a position that will allow him/her to perform extended work in that discipline while testing areas of potential career interest. Academic credit is offered for internships that take place under the supervision of qualified agency sponsors and in conjunction with appropriate Clark faculty members. Internships are equivalent to undergraduate courses, and tuition is assessed on a per-credit basis. All internships must be approved by the Internship Office. Internships are generally graded on a pass/no record basis.

PART-TIME EMPLOYMENT PROGRAM

The Part-time Employment Program, a federally subsidized facet of the College Work-Study Program, is a referral service designed to assist students looking for part-time and summer employment. The Office of Financial Aid maintains a listing of jobs available in the greater Worcester area; interested students are registered and referred for the consideration of participating employers. The service is available to all currently enrolled Clark students, regardless of financial need.

INTERNATIONAL PROGRAMS

Clark University is committed to encouraging a strong Clark presence abroad and a strong international presence at Clark. The Office of International Programs serves both areas, through its services to international students and its study abroad programs and exchanges.

The Office of International Programs, which operates from Clark's

International House, issues appropriate visas and provides international students with information on subjects ranging from immigration regulations to practical and personal questions related to life at Clark.

Clark-sponsored study abroad programs are available on a competitive basis to qualified students in seventeen locations. The program offers students selected opportunities to study at universities in the British Isles, France, Germany, Spain, Italy and Japan. Students who study abroad on a Clark program pay regular tuition, room, and board to Clark. Clark assumes responsibility for the students' academic programs and normal living expenses for the academic year and grants a stipend for air fare. Students may earn up to a full year of credit through study abroad. Students interested in study abroad should attend regularly scheduled meetings or drop by International House to pick up *Study Abroad Guidelines*. For further information, contact the Office of International Programs located at 18 Beaver Street, (617) 793-7362.

WASHINGTON STUDIES PROGRAM

Clark participates in the Washington Semester Program of the American University in Washington, D.C. and the Washington Center for Learning Alternatives Internship Program.

Under the program, a small number of students may be nominated to attend the program, usually in the junior year, studying United States government in the nation's capital. Although any student may be interested in the program, the opportunity should be particularly attractive to students majoring in government and international relations, history, economics, or sociology. Inquiry and application should be made to the chair of the Department of Government and International Relations for the Washington Semester Program and to the director of the Internship Office for the Washington Center for Learning Alternatives Internship.

PREPROFESSIONAL PROGRAMS

Clark University recognizes professional preparation is fully compatible with a liberal arts education. In that spirit, Clark offers a bachelor of fine arts degree and preparation for careers in management, computer science, education, law, medicine and other health sciences.

Students interested in law school are advised to plan a broadly based academic program that is liberal in character and has adequate samplings drawn from the natural and physical sciences, social sciences, and humanities. Although there is no specific major or constellation of courses recommended for all prelaw students, it is important that the courses selected lead toward the development of certain skills: (1) *Communication and articulation skills*: courses in composition and creative writing as well as courses in history, philosophy,

government, and other fields in which the ability to read and write well is stressed; (2) *Quantitative analysis and graphic presentation*: courses in mathematics, computer science, economics, and geography, which help develop the ability to compile, understand, and interpret data and to present and analyze it in graphical form; (3) *Logic*: the study of law requires the systematic analysis of propositions and of the conclusions that can be drawn from them; all courses that provide training in this skill are highly desirable; (4) *Critical understanding*: courses in ethics (philosophy), history, sociology, and other social sciences that promote understanding of human institutions and values are recommended.

In general, the records of students applying to law schools will be evaluated according to several criteria: (1) the overall quality of grades, (2) the breadth and distribution of courses, and (3) evidence of advanced learning and scholarship.

Students who are interested in prelaw are urged to consult the members of the Prelaw Advisory Board through the Academic Advising Center.

Students interested in premedical or predental programs may major in any of the sciences, social sciences, or humanities, but must complete (normally before the end of the junior year) the minimum requirements for admission to medical or dental school: one year each of introductory chemistry, biology, physics, and organic chemistry (all with laboratories), and one year of English. A semester of psychology and a year of calculus are also strongly recommended or required by many medical and dental schools. Although there is considerable variation, some medical or dental schools encourage students to take courses in quantitative analysis, physical chemistry, and advanced biology. Proficiency in quantitative reasoning, communication skills, and reading comprehension must also be developed, and a broad liberal arts background is helpful toward that end. In selecting their courses and planning their programs, students are urged to consult members of the Premedical and Predental Advisory Committee and the brochure entitled *Pre-Med/Pre-Dent Studies*, compiled by the committee. Copies of it and other materials pertaining to premedical, predental, and other health profession education are available in Sackler J307.

RESERVE OFFICERS' TRAINING CORPS (ROTC)

Clark University students may participate in and receive benefits of the four- or two-year Reserve Officers' Training Corps (ROTC) programs conducted at the College of the Holy Cross and Worcester Polytechnic Institute, where the ROTC offices are located. The ROTC programs, which are voluntary, lead to a commission as an officer.

The academic program consists of a one-hour, noncredit general military course each semester of the first and second years, and a three-hour, one-credit professional officer course each semester of

the third and fourth years. In the first two years, courses cover military organization and history. Courses in the final two years cover management, leadership, American defense policy, and military law.

Each student is also provided with field training, which is completed during the summer between the second and third years. Students attending field training receive travel pay and are paid while in attendance at summer camp. Students who participated in the last two years of ROTC must attend field training for six weeks; students who have participated during the first two years of ROTC attend for four weeks.

Students not already receiving an ROTC scholarship may compete for scholarships that range in duration from two to three-and-a-half years. Some of the scholarships cover all tuition costs, fees, and all expenses for books used in courses in which the student is enrolled. In addition, in some cases a monthly tax-free subsistence allowance is paid to scholarship students, and to students in their last two years of ROTC.

The basic qualifications for enrollment in the ROTC Program require a student to be a citizen of the United States, of good moral character, and of sound physical condition. For further information, interested students should contact the ROTC units at the College of the Holy Cross and Worcester Polytechnic Institute.

ACADEMIC FACILITIES AND RESOURCES

LIBRARIES

The Robert Hutchings Goddard Library is the academic heart of the University and an architectural landmark. The library contains 500,000 volumes (including microform volumes), a collection of 240,000 monograph titles, and subscriptions to 2,300 periodicals. As a member of Worcester's education consortium, Clark also offers students the use of 10 consortium college libraries and a combined collection of 2 million volumes.

Goddard Library offers an exciting mix of educational resources, including a viewing area for videocassettes; a listening area for compact disks, records, and tapes; a language lab; microcomputers; and terminals linked to the campus computing network. In addition to seating space for more than 900 students, there are faculty study rooms, a seminar room, and assigned carrel space for graduate students.

The library is open 102 hours per week with a normal weekday schedule of 8 a.m. to midnight. The schedule is extended at exam times to provide even longer study hours.

The Guy H. Burnham Map and Aerial Photography Library. One of five federal depositories for maps and charts, the collection consists of

over 147,000 maps, charts, atlases, aerial photographs, and globes. It is located in the lower level of the Geography Building.

The CENTED Library. The Center for Technology, Environment and Development (CENTED) has a specialized research collection that is coordinated with the University's central library and staffed by professional librarians. The CENTED library contains books, technical reports and government documents in the areas of risks and hazards, environment and development, climatic impact, and water resources. It also has a unique data base on 100 technological hazards, and subscriptions to more than 300 journals and newsletters.

The Science Library, opened in 1985, houses recent books and journals in the fields of biology, chemistry, and physics. Microcomputers and a seminar room are available for students' use.

COMPUTER CENTER

A new University Computer Center houses Clark's cluster of VAX Digital Equipment Corporation (DEC) computers including a VAX 11/780 and two VAX 11/750s used in both teaching and research. There are 52 individual terminals available to undergraduates. Open seven days a week, the center also offers the use of special graphics terminals, allowing students to easily create graphical representations—a feature of special interest to Clark student artists and cartographers. Clark also offers a "Rainbow Room," a personal computer facility featuring a bank of 40 DEC Rainbow 100s. The Rainbow Room not only provides needed computer time for student use but also serves as classroom space for courses, supplementing those courses that rely on the University's mainframe cluster.

SCIENCE FACILITIES

A recent addition to the campus is the \$8 million Arthur M. Sackler Sciences Center opened in the fall of 1984. The brick and glass complex, which includes facilities for teaching, research, and experimentation features state-of-the-art scientific equipment. The center houses a range of specialized instruments including an electron microscope and facilities for high-field nuclear magnetic resonance (NMR) spectroscopy, which serve Clark students and researchers, as well as those of the central Massachusetts region. A centralized science library and a microcomputer room also are housed here.

VISUAL AND PERFORMING ARTS FACILITIES

- The George F. and Sybil H. Fuller Foundation Center for Music, dedicated in March 1985, is a state-of-the-art facility for teaching, performing, rehearsing, recording, and experimentally creating. The Center has two new Computer Music Studios, one a powerful direct digital system built around a Digital MicroVAX II and the other a hybrid studio with a personal computer interfaced to digital synthesizers.

Other facilities are:

- Studio space for drawing, painting, graphic design, visual studies, and photography as well as darkrooms and printmaking facilities.
- Two theaters—the 700-seat Atwood Hall and the 150-seat Little Center Theater, both of which also serve as concert halls.
- A newly installed sculpture/theatre set studio.
- A University Art Gallery, managed by student interns, which provides students opportunity to plan, design, hang, and proctor exhibitions.

RESEARCH INSTITUTES AND CENTERS

The Center for Technology, Environment and Development, an interdisciplinary research organization established in 1978, conducts basic and applied research related to major societal and global problems including technological hazards, environmental aspects of international development, and climatic change. The center also conducts distinctive training programs for professional researchers and for graduate and undergraduate students and contributes its expertise by responsibly informing governmental policy makers and publics. CENED's interdisciplinary research groups engage more than thirty scholars representing a diversity of disciplines, including biology, chemistry, economics, geography, government, history, international development, medicine, physics, social psychology and sociology.

The Heinz Werner Institute for Developmental Analysis is devoted to the application of developmental analysis to all psychobiological and psychocultural phenomena. Heinz Werner (1890-1964), one of the leading psychologists of the past half-century, was the first chairman of the Board of Directors of the Institute of Human Development, founded at Clark in 1957 to promote the application of developmental analysis to all of the life sciences. After his death, the trustees of Clark renamed the institute in Werner's honor in recognition of his stature and eminence as a scholar, teacher, and scientist.

The Institute is designed to promote conceptual and empirical inquiry into all aspects of human development and to provide education and training in holistic-developmental analysis and synthesis. The Institute encourages interdisciplinary conferences and research cooperation among all groups whose primary interest is in the promotion of human development.

The Institute for Economic Studies, funded with an initial grant from the John M. Olin Foundation, began its operation in January 1980. The institute's main objectives are to research significant economic issues and propose policy options to deal with them and to disseminate the results of the research—particularly its policy recommendations—to a broad audience. The institute provides a framework within which new curricula and teaching methods may be developed. In addition, a Scholars in Residence Program was instituted in 1984 to stimulate the exchange of ideas and dialogue

between guest scholars and members of the institute and economics faculty. The institute director is Professor Attiat F. Ott.

New Technologies Safety and Health Institute, founded in 1987, is the first dedicated to the comprehensive assessment of potential occupational and environmental hazards of new and emerging technologies.

Requirements for a Bachelor's Degree

GENERAL REQUIREMENTS

Course requirements: Credit toward the bachelor of arts and bachelor of fine arts degrees is expressed in terms of courses. A one-semester course normally involves two 75-minute or three 50-minute class meetings per week and three to four hours of laboratory per week, when applicable. Normally each semester course is equivalent to one unit (four semester hours). A minimum of thirty-two units plus satisfactory completion of institutional and major requirements are necessary for the bachelor's degree. At Clark we view education as developmental. It is, therefore, more than a simple accumulation of credits. Students entering as freshmen may not accelerate their progress toward graduation by more than one semester through any means. Matriculated students must complete a minimum of seven fulltime academic year semesters or their transfer equivalent for graduation.

Minimal academic performance: To graduate with the B.A. or B.F.A. degree, a student must receive passing grades in a minimum of 32 full courses required for graduation; he/she must receive a C- or better in at least 24 of these courses. Equivalencies for students with fewer than 32 courses in residence will be established by the College Board.

For the purpose of transfer, a full course is equivalent to four semester-hours credit.

RESIDENCE

To earn a bachelor's degree at Clark a student must earn at least one-half the total number of course units for the degree and at least one-half the total number of course units taken for fulfillment of a major as *residential* credit. Residential credit is defined as credit earned through courses taught in residence in a Clark program. External credit is credit earned in the following categories:

1. Advanced placement and transition programs.
2. Summer school credit taken after matriculation at Clark.

3. Credits transferred from other American colleges and universities.
4. Credit earned in foreign study programs administered by American or foreign institutions of higher learning other than Clark.

The amount of (external) credit that can be applied to a bachelor's degree at Clark is limited by category.

1. No more than one semester (4 units) may be granted in advanced placement (A.P.). A.P. credit is defined as two units of degree credit assigned for a score of 4 or 5 on a CEEB A.P. examination. Students *may* also receive credit for college work completed prior to their matriculation at Clark University if that credit was not needed to fulfill high school graduation requirements, is in a content area deemed academically acceptable to Clark, and is from an accredited college or university. Finally, students *may* apply for advanced placement credit based on coursework or exams taken in international programs. Credit is assigned on a case-by-case basis.
2. For already matriculated Clark students, no more than three semesters (12 units) of other external credits may be applied toward a Clark degree. No more than four units may be taken in summer courses.
3. Eight of the last sixteen units must be completed at Clark or in a Clark-sponsored program.

DECLARATION OF THE MAJOR

Students must declare their major no later than the end of the second semester, sophomore year. Changes in major after this point are possible but may prolong the undergraduate experience. During the freshman year, students are encouraged to seek advice from their faculty adviser or the Academic Advising Center.

ACADEMIC REGULATIONS

An undergraduate normally carries a full program of four courses per semester. Students should consult with their faculty adviser, the Academic Advising Center or major departments when questions about course or program selection arise.

Freshmen and sophomores may choose any course designated by a department as open to them, subject to prerequisites.

Juniors and seniors may elect any 100- or 200-level course; course selection by juniors and seniors is subject to conditions stated in course descriptions.

Undergraduates may be admitted to 300-level courses (courses primarily for graduate students) with the approval of the dean of the Graduate School.

GRADES

Grades are an indication of individual performance in each course taken in the college. At Clark four grading patterns are currently in use:

1. *Graded courses*: This pattern uses the symbols A, B, C, D, and F with the modifying symbols "+" and "-" for A, B, and C. The lowest passing grade is D.
2. *The Failure Removed (FR) Grade*: Students enrolled in graded courses will receive an FR in place of their first two earned F grades. An FR will not appear on the student's transcript. After a student has received two FR grades, all subsequent F grades *will* appear on the transcript and become a part of the student's permanent file. An F grade also may be assigned by the College Board in cases of serious infractions of academic integrity.
3. *The Pass/No Record Option*: This option uses the symbols P, NR. P indicates work at a level of C- or better. Performance below a C- results in a No Record (NR) grade. NR's do not appear on student transcripts. Students must choose this grade option at registration.
4. *The Credit/No Credit Option*: This option uses the symbols CR/NC. CR indicates work at a level of C- or better. The NC is treated like an F.

ELECTION OF THE PASS/NO RECORD OPTION

The availability of the pass/no record option in all courses is designed to help minimize the competitive aspects of grading for those who find competition detrimental to learning. Some students may wish to elect a number of their courses on this basis.

All students should remember that the great majority of graduate and professional schools have expressed a preference for graded transcripts and encourage applicants to have many graded courses. Preprofessional students and those for whom graduate school is a goal should exercise caution in employing the pass/no record option. Students who are interested in attaining honors, such as Phi Beta Kappa and general course honors at graduation, also should exercise the option cautiously.

NONCREDIT AUDIT STATUS

Full-time degree students are eligible to register as auditors in any course with the permission of the instructor. There is no additional

charge for this privilege. Part-time matriculated students also may register as auditors with the permission of the instructor and the payment of a per-course fee. In limited or sectioned courses, regularly enrolled Clark students are given preference for available openings.

Matriculated students who successfully complete audited courses (this determination is made by the instructor) will have the audited courses posted on their permanent records.

Note: Records for nonmatriculating auditors are kept for only the semester in attendance. Transcripts are not issued for audited courses.

WITHDRAWAL FROM COURSES

A student may withdraw from any course at any time during the first four weeks of classes. Withdrawal from a course after the fourth week of classes constitutes withdrawal from an enrolled course. The student may not substitute another course in its place. Withdrawal from a course after the fourth week of any semester results in a W being recorded on the student transcript.

INCOMPLETES

A record of incomplete may be permitted by approval of the College Board or dean of the college only when sickness or some other unavoidable circumstance prevents completion of the course. *Individual instructors may not assign incompletes without the approval of the College Board or dean of the college.* A record of incomplete incurred in the first semester must be made up no later than the following April 1; if incurred in the second semester, it must be made up no later than the following October 1. *If a course is not completed within the specified time, the record of incomplete is changed to F.*

REGISTRATION

All continuing undergraduates are expected to register in November for the spring semester and again in April for the following fall semester. Details are provided in the registraion class schedule each semester. Registrations must be finalized by the end of the second week of classes each semester. Notification of the dates for registration is given, and failure to register within the announced period results in a late fee.

EXAMINATIONS

Final examinations are given at the end of many courses. Approximately one week is set aside for each examination period, and an attempt is made to distribute examinations for individual students evenly throughout this period. Absence from a final examination, except for the most compelling reasons, may result in a failure for the course. Comprehensive final exams are not to be given (or to be

due) during the last week of class or the scheduled reading period. Other examinations and tests may be given at any time during the course at the convenience of the instructor.

CLASS ATTENDANCE

The University has no class attendance requirements; however, instructors have the prerogative of establishing such requirements for their own courses.

STUDENT ABSENCE DUE TO RELIGIOUS BELIEFS

According to Massachusetts state law, any student in an educational or vocational training institution, other than a religious or denominational educational or vocational training institution, who is unable, because of his or her religious beliefs, to attend classes or to participate in any examination, study, or work requirement on a particular day shall be excused from any such examination or study or work requirement, and shall be provided with an opportunity to make up such examination, study, or work requirement which the student may have missed because of such absence on any particular day; provided, however, that such makeup examination or work shall not create an unreasonable burden upon the school. No fees of any kind shall be charged by the institution for making available to the student such opportunity. No adverse or prejudicial effects shall result to any students because of their availing themselves of these provisions.

COURSE CHANGES

A student may enter a course without special permission (unless such permission is required) any time up to the end of the first week of classes. After Registration is complete, a student may enter a course only with the permission of the instructor. Students may add courses up to four weeks after the beginning of classes. Thereafter, a student may enter a course only with the permission of the instructor and the College Board.

CLASSIFICATION OF STUDENTS

All students who have not been required to withdraw at the end of the academic year will be promoted if they have satisfactorily completed the following number of courses.

To the sophomore class	6 courses
To the junior class	14 courses
To the senior class	22 courses

PARTIAL PROGRAMS

In special circumstances, students may be permitted by the deans to register for a semester program of less than three courses. These students are designated as part-time students.

GUEST AND SPECIAL STUDENTS

The University provides for guest students from other colleges and universities who want to study at Clark for one or two semesters and for special students who want to take only a few courses without enrolling as degree candidates. Students enrolled as guest students should contact the Admissions Office. Persons interested in special student status should contact the registrar.

ACADEMIC STANDING

Academic standing will be reviewed each semester. All students shall be required to pass at least two courses with grades of C- or higher each semester. In order to remain in good academic standing, first-year students must complete at least five courses (with four grades of C- or higher) by the conclusion of their first year, and upperclass students must complete at least six courses (with four grades of C- or higher) each year. In addition, students may earn no more than 8 D grades for credit toward graduation. Students who fail to meet these requirements will be placed on academic probation for the next semester they are enrolled in the institution.

Students who do not maintain academic good standing or who violate academic integrity may be placed on academic probation by the College Board. The progress of students who are placed on academic probation is subject to continual review by the Board.

Students on probation will be expected to complete four courses with grades of C- or higher or face a required withdrawal for the subsequent semester.

ACADEMIC INTEGRITY

Academic integrity is a basic value for all higher learning. Simply expressed, it requires that work presented must be wholly one's own and that all direct quotations must be identified by source. Academic integrity can be violated in many ways: for example, by submitting someone else's paper as one's own, cheating on an exam, copying a computer program, altering data in an experiment, or quoting published material without proper citation of references or sources.

To ensure academic integrity and safeguard students' rights, all suspected violations of academic integrity should be reported to the College Board. Such reports should be carefully documented, and students accused of the infraction notified of the charge. In the case of proven academic dishonesty, the student may be required to withdraw from the University.

LEAVES OF ABSENCE

A student who is in good standing may apply to the dean of students for a leave of absence, after which he/she may return to the University without formal application for readmission.

Honors and Awards

DEPARTMENTAL HONORS

A student may elect a program leading to a bachelor's degree with honors in a particular subject at the beginning of the junior year and, in some cases, at the beginning of the senior year. Under the plan, the department appoints an honors adviser who assists the student in planning a unified program of courses for the junior and/or senior years. The program may include a maximum of six courses in which the student works with a large measure of independence under the supervision of the adviser. In the senior year, the student must pass a comprehensive examination given by the department.

Students may apply in writing to their major departments for permission to take honors work, not later than May 1 of the sophomore year or, in some departments, in the junior year. Department approval is necessary for admission to such work.

Admission to an honors program does not exempt the student from any of the standing regulations. A student's candidacy for honors will be terminated at the end of any semester in which he/she has not maintained a standard satisfactory to the department in which the honors work is being done.

The department may recommend the student's graduation with honors, high honors, or highest honors; such recommendation occurs at the conclusion of the honors program.

ANNUAL HONORS

In June of each year, the dean of the college publishes a list of students who have distinguished themselves by outstanding academic performance in the preceding year. Honors are awarded to the top students in each class based on annual grade average.

LATIN HONORS

Latin honors are awarded at three levels: *cum laude*, *magna cum laude*, and *summa cum laude*. Honors are determined by the College Board on the basis of eight semesters' work or its equivalent. Criteria, such as grades, percentage of courses taken on P/NR and graded basis, and number of courses at Clark, are used for determining the awarding of general honors. Ordinarily three quarters of a student's record at Clark must be graded if he/she is to be eligible for general honors.

PHI BETA KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies. The Clark Chapter, Lambda of Massachusetts, was established in 1953. Each year, a limited number of juniors and seniors are elected to member

ship on the basis of distinction in programs that are clearly liberal in character, with due consideration of evidence, both formal and informal, of high scholarship and creativity.

GRYPHON AND PLEIADES

Gryphon and Pleiades is the senior honor society at Clark. Its membership includes students who have been recognized by administration, faculty, and their peers for academic achievements and extracurricular activities. The objectives of Gryphon and Pleiades are to study, discuss, and strive to further the best interests of Clark University. In addition, the society makes suggestions to the faculty, administration, and the student body for the improvement of campus conditions.

Tuition and Other Charges

SUMMARY OF TUITION AND OTHER CHARGES FIRST AND SECOND SEMESTERS ACADEMIC YEAR 1987-88

Tuition		\$11,000
Museum Tuition	5,600	
Health Services Fee		100
Room:		1,750
Dormitory double room	1,750	
Dormitory single room	2,450	
Dormitory triple room	1,450	
Board (19 meals: \$1,845, 10 meals: \$1,625, 5 meals: \$1,140)		1,845
Student Activity Fee		150
Telephone (required for dorm students)		70
SUB-TOTAL for continuing students:		\$14,915
Charges that apply to new students only:		
Contingency Deposit		30
Orientation Fee		100
TOTAL		\$15,045
OTHER FEES		
Clark Student Health Insurance		\$252 single*
Students will be required to enroll in the Clark Insurance Plan unless they show proof of other coverage.		
Application Fee (undergraduate)		35

DEPOSITS

Admission Deposit	\$ 100
Tuition Deposit (upperclassmen)	200
Residence Hall Deposit	100

Note: Costs are subject to change from year to year.

*\$516 student/spouse; \$789 student/spouse/children

GENERAL INFORMATION

Tuition, board, residence hall charges, and certain fees are due and payable prior to the beginning of each semester. The dates for 1987-88 are: August 15, 1987 for Semester 1 and December 15, 1987 for Semester 2. Students are not permitted to register for any semester until all financial obligations have been arranged satisfactorily with the University.

There is a *late* fee of \$25 assessed against all accounts not paid in full by the August and December due dates. In addition, *interest* at the rate of 1-1/2 percent per month (annual rate 18 percent) will be charged on all balances (including tuition deposit) 30 days or more past due.

TRANSCRIPTS

Transcripts can be obtained from the Registrar's Office. There is no charge for first or unofficial transcripts. For all other transcripts, seniors pay \$1 per copy, and other students pay \$2.

REFUND POLICY

Withdrawals from the University are processed in the Dean of Students' Office. A student who officially withdraws in writing during the first week of any semester is allowed a refund of 80 percent on tuition; during the second week, 60 percent; during the third week, 40 percent; during the fourth week, 20 percent; after the fourth week there is no refund. The activity fee is refunded by the same formula. There is no refund on other charges, except board, when a student withdraws from the University.

When a student has left, but not withdrawn from, the University on the advice of a doctor within the first four weeks of a semester, and a decision is made later that the student must withdraw, tuition refund is made retroactive to the date of the doctor's recommendation, based on the schedule described above.

NORMAL PROGRAM AND COURSE LOAD VARIANCE

A normal full-time academic program is eight course units per year (four course units per semester). Students may elect to vary this pattern by taking three course units during any semester. Students who have received College Board permission may choose to take five courses in a semester during their junior and senior years at no additional charge. Students must, however, complete a minimum of seven full-time semesters to meet degree requirements.

Seniors in their last semester are expected to take the necessary number of units (up to five) for their degree. Seniors in their last semester will be billed on a per-course basis at the rate of \$1,275 for each course. Full-time freshmen or transfer students, in their first semester at Clark University, must enroll in a four-course program. Students re-entering the University, or returning from leaves of absence, also must enroll in a four-course program during their first semester.

ORIENTATION FEE

A fee of \$100 is assessed to all new students to cover services and activities provided during orientation.

CONTINGENCY DEPOSIT

All undergraduates are required to pay \$30 deposit to cover minor charges, such as property damage, which may be incurred during the year. Students are billed each year for whatever charges are incurred; the balance is refunded upon completion of studies.

HOUSING DEPOSIT

A University housing deposit of \$100 is required of upperclassmen each spring to reserve a place in University housing. It is credited toward housing fees. The deposit is forfeited if the student does not enroll for the specified semester.

APPLICATION FEE

A fee of \$35 must accompany the application for admission to the college. It is *not refundable*.

STUDENT ACTIVITY FEE

A fee of \$75 per semester, levied and administered by the Student Council, is required of all matriculated undergraduates. It pays for admission to and participation in a wide range of cultural and recreational activities.

ADMISSION DEPOSIT

For entering students planning to live on campus, a nonrefundable admission deposit of \$100 *and* a housing deposit of \$100 are required to indicate acceptance of an offer of undergraduate admission. For students planning to live off campus, only the \$100 admission deposit is required. Deposits are credited toward charges for the first semester in attendance at Clark. Deposits are *forfeited* if the student does not enroll for the specified semester.

TUITION DEPOSIT

A deposit of \$200 is required of all students planning to return to the University for their sophomore, junior, or senior years. It is payable by July 1 and is credited toward charges for the fall semester; \$100 of the deposit is forfeited if the student does not enroll for the specified semester.

IDENTIFICATION CARD

Identification cards are issued each year to all students without charge. This card is an official college identification and should be carried at all times. Loss should be reported immediately to the Campus Police. There is a \$5 replacement charge for lost I.D.s.

KEYS AND KEY SECURITY

Room keys, mailbox keys and residence hall entry cards are issued to students upon their arrival at Clark. Fees are charged for the replacement of keys and cards that are lost during the year, and it is mandatory to return them before leaving campus at the end of the academic year. The following charges are assessed to students who fail to return their keys at check-out when the residence halls officially close: \$30 for the room key, \$5 for the mailbox key.

TUITION BUDGET PLANS

The University offers two budget plans designed for families who find it easier to budget college costs from monthly income as opposed to the traditional twice yearly payment system. Under these plans, annual college charges are divided into consecutive monthly payments. The plan administered for Clark University by The Tuition Plan of New England in Concord, N.H. allows families to budget over a period of ten months beginning with payment in May. The plan provided by Academic Management Services of Pawtucket, Rhode Island allows families to budget over an initial period of ten months. (Subsequent years' payments may be spread over 12 months upon reapplication.) This plan also begins in May with final payment due in February.

For the 1987-88 academic year, the Tuition Plan application fee is \$35, and the Academic Management Services plan application fee is \$45. Both plans provide free life insurance coverage to eligible participants. This coverage guarantees payment of the balance of the budgeted amount to Clark University in the event of the death of the insured parent. Information regarding these plans is mailed to continuing students and students who are offered admission to the University.

Student Services

ORIENTATION

All new students are expected to attend the orientation program at the opening of their first semester. This program helps students plan a course of study and familiarizes them with the Clark and Worcester communities. Although the emphasis is on academic advising and placement, orientation also facilitates personal and social adjustment.

ADVISING

Academic advising is coordinated by the Academic Advising Center. All freshmen are assigned a faculty adviser who assists the student in planning her/his program of study through the sophomore year. Academic advising for juniors and seniors is normally done within individual departments. Students should consult their major departments for the assignment of a major adviser.

UNIVERSITY HOUSING

Clark University provides housing for approximately 1,400 students in twelve houses and seven residence halls, both coeducational and single sex. Freshmen, unless they are commuting from home for classes, are expected to live in University housing and can choose between accommodations where residents are all freshmen or where they are members of all four classes. Housing is available for a limited number of transfer students.

An option for continuing students is to live off campus in privately owned apartments. Approximately one-third of Clark students live in private housing in the immediate neighborhood.

Rooms for new students are assigned during the summer, and assignments are mailed to home addresses in late June or early July. Rooms for continuing students are determined in the spring of the school year by a modified lottery system; when the demand for University rooms exceeds the available supply, this system determines who receives guaranteed housing and who receives wait-list status. The lottery numbers, in combination with class standing, also determine the order in which students come to choose their particular room. Underclass students receive greater preference in the number of spaces available to them; upperclass students generally have first choice in selecting particular housing spaces. Usually all continuing students requesting University housing receive it, though some receive room assignments later in the summer. Requests for University housing, when honored, are considered binding for the full academic year as long as the student is registered. Conditions of living in University housing are specified in the housing contract that is required of all residents.

Because there has been an increasing student demand for Clark accommodations in the past several years, the University is studying options to expand housing opportunities and to address the changing needs of the student body in a sensitive and personal manner.

DINING HALLS AND MEALS

Dining halls in Dana Commons and Jefferson Hall are operated for the convenience of the Clark community and guests. Service is cafeteria style, and students select from a variety of plans with respect to both the number of weekly meals and particular dietary needs, such as kosher or vegetarian. "950 Main," a casual gathering place for food, drink, socializing, and entertainment, includes snack and juice bars, game and TV rooms, and a rathskellar.

HEALTH SERVICE

The Clark University Health Service is a primary care outpatient clinic that provides on-campus health care to matriculated (day college) students. It is staffed by family practice physicians from the Hahnnemann Family Health Center, nurse practitioners, and a registered nurse. The clinic, located on the first floor of Wright Hall at 30 Downing Street, is open Monday through Friday 9 a.m.-5 p.m. There is always a physician on call when the Health Service is closed.

Students may make an appointment at the Health Service—with either a physician or a nurse practitioner—for diagnosis, treatment, follow-up, or counseling regarding health problems. Gynecological and contraceptive services are available.

The Health Service staff has a holistic approach to health problems. Emphasis is placed on prevention, wellness, and health education. Staff members consider their roles to be congruent with, and an integral part of, the educational process.

Prior to registration students are required to submit a completed history and physical exam form to the student Health Service. Massachusetts state law requires that college students under 30 years of age must present evidence that they are immunized against measles, mumps, rubella, diphtheria, and tetanus in order to register for classes. All students are required to have adequate medical insurance coverage, through either a family policy or the Clark University Student Health Insurance Plan. Failure to submit proof of alternative coverage will result in the student being automatically enrolled in the Clark Plan and charged accordingly.

PSYCHOLOGICAL SERVICES

The Clark University Psychological Services Center offers psychodiagnostic, psychotherapeutic, consultative, and referral services to members of the Clark community. Administratively the center is part of the Department of Psychology and is a training agency for graduate students in clinical psychology. A significant portion of the center's work is done by graduate students under supervision of several faculty-staff members who are clinical psychologists. A brochure describing the center and its services may be obtained at the center's main offices in Room 301 of Jonas Clark Hall.

OFFICE OF CAREER SERVICES

The Office of Career Services provides many programs to assist undergraduates in career exploration in "testing" career choices, in obtaining "hands-on" experience, and in the development of appropriate skills and strategies so that students may present themselves effectively as candidates for employment or graduate/professional programs.

Services include: (1) a *career library* that houses information on hundreds of occupations, graduate catalogues, employer directories, "how-to" guides for resume writing, interviewing, and the job search process; internship, part-time, summer, and full-time employment

listings; and company/organizational promotional literature; (2) *career planning and job search advisers* to assist students on an individual basis; (3) *DISCOVER*, a computerized career decision and information system; (4) *seminars* on occupational opportunities, resume writing, interviewing, job hunting, choosing graduate/professional programs, and summer job possibilities; (5) *reference files*, a service that provides a central clearinghouse for letters of recommendation to be sent to prospective employers, graduate schools, or professional programs; (6) a *weekly job bulletin*, which lists position openings in education, the social sciences, administration, business-related fields, computer science, communications, and life/physical sciences; and (7) *on-campus employment interviews* representing business, industry, school systems, social services, and government agencies. These representatives visit our campus to interview qualified Clark candidates.

Athletics and Recreation

Athletic programs are designed to stimulate and encourage students to wider participation in physical activities, promote health and mental efficiency, and lead to continuing participation throughout life. Participation is voluntary.

STUDENT ATHLETIC CENTER

Clark has a modern student athletic center, which houses all male and female athletic and recreational programs. The center has a central gymnasium with three full-size basketball courts, three volleyball courts, three tennis courts, eight badminton courts, a jogging track, and a setup for gymnastics. There is 6-lane, 25-yard pool with 1- and 3-meter diving boards. There are four handball/paddle racquet courts, two squash courts, and areas designated for weight training, voluntary physical education, exercising, crew, and dance.

Clark's outdoor sports facilities include lighted soccer, baseball, field hockey, softball, and intramural fields and six elasta-turf tennis courts.

INTERCOLLEGIATE ATHLETICS

For students with a reasonably high level of skill and a well-defined and strong interest in athletic competition, intercollegiate schedules are arranged for men in golf and baseball; for men and women (separately) in soccer, basketball, crew, cross-country, tennis, swimming, and track; for women in volleyball, field hockey, and softball. Additional intercollegiate competition may be arranged as student interest warrants.

Clark University is a member of the National Collegiate Athletic Association, the Eastern College Athletic Conference, the New England College Athletic Conference, and numerous sports associations. Clark is an N.C.A.A. Division III school, and our more than 250 student athletes typically compete with the following Division I, Division II, and Division III schools: Amherst, Williams, Brandeis,

Tufts, M.I.T., Bates, Bowdoin, Colby, Middlebury, Coast Guard, Assumption, Holy Cross, Wesleyan, Trinity, W.P.I., Springfield.

INTRAMURAL ATHLETICS

The intramural program provides many opportunities for recreation and competition among students, faculty and staff. During fall, winter and spring seasons, teams play basketball, softball, soccer, ultimate frisbee, touch football, volleyball and inner tube water polo. Individuals may enter into tournament competition in tennis, racquetball, squash, and cross country.

CLUB SPORTS

Clark also supports two competitive "club sport" teams, which offer limited intercollegiate play in men's lacrosse and men's squash.

VOLUNTARY PHYSICAL EDUCATION PROGRAM

Noncredit tuition-free classes for men and women are available in areas such as ballet, modern dance, fencing, self defense, gymnastics, tennis, racquetball and jazz aerobics. Other classes are created in response to student interest. Also, an elective full-year course for credit in physical education will be offered starting in the fall of 1987.

Admission

FRESHMAN ADMISSION

Clark University welcomes applications for admission from men and women regardless of race, color, sex, sexual orientation, religion, age as defined by law, handicap, national origin or financial condition. Selection is competitive and based primarily on academic promise as indicated by secondary school performance, recommendations, and Scholastic Aptitude Test scores. Secondarily, decisions reflect consideration of the individual experience and particular circumstances unique to each candidate.

ENTRANCE REQUIREMENTS

In general, the completion of a minimum of 16 acceptable units of credit in a four-year secondary school program or its equivalent is required for admission to the freshman class. Such preparation typically includes four years of English; two or more years of foreign language study; two or more years of mathematics (three or more for those planning a science or mathematics major); at least one year each of social studies and natural science (more laboratory work for those planning a science major); and other credit electives, including the arts, recognized in the secondary school curriculum.

ADMISSION TESTS

Applicants for freshman admission in September should submit

the results of the Scholastic Aptitude Test (S.A.T.) administered by the College Entrance Examination Board no later than January. One Achievement Test is required: the English Composition Examination (preferably with essay); two others are recommended.

REGULAR ADMISSION

Candidates for freshman admission in September should initiate their applications as early as possible, usually during the first semester of the final year of secondary school, and no later than February 15. The deadline for admission at midyear is November 15. A *nonrefundable* fee of \$35 must accompany each undergraduate application unless a waiver is being requested. Clark participates in the Common Application Program and accepts photocopies of the appropriate forms, which are distributed to secondary schools.

EARLY ADMISSION

Exceptional students are invited to apply for early admission when encouraged and supported by enthusiastic recommendations from their secondary schools.

EARLY DECISION

As a service to students for whom Clark is clearly first choice, Clark has established an Early Decision Program. Applications in writing for an early decision must be submitted by December 15. Decisions are announced on or about January 15. Candidates will be offered admission or deferred for further consideration with regular applicants. Although this program does not preclude regular applications to other colleges, participation by a student does imply a commitment to withdraw such applications upon notice of acceptance by Clark.

INTERNATIONAL ADMISSIONS

Foreign students attending secondary schools *within* the United States may use the standard application forms. The Test of English as a Foreign Language (TOEFL) is required of all candidates whose native or official language is not English. TOEFL results for successful applicants are usually in the 550-650 range. For information, write to TOEFL, CN 6151, Princeton, NJ 08541-6151. Those attending secondary school in the United States for less than two years need *not* submit results from the Scholastic Aptitude Test (SAT) but these students *must* submit TOEFL scores if their native language is not English. Financial aid for foreign students is limited and is based on completion of a financial aid application. Those at secondary schools in the United States under a student visa will need another visa for university study. *The Certificate of Eligibility (I-20)*, necessary to obtain a student visa, will be granted only after full admission and a receipt of a *Certification of Finances* signed by a bank official.

NOTIFICATION OF ADMISSION AND DEPOSITS

Regular notification of admissions decisions for September freshmen occurs on or about April 1, and Clark subscribes to the

Candidates' Reply Date, May 1. For students planning to live on campus, a nonrefundable admission deposit of \$100 and a housing deposit of \$100 are required to indicate acceptance of an offer of undergraduate admission. For students planning to live off campus, only the \$100 admission deposit is required. Deposits are credited toward charges for the first semester in attendance at Clark.

DEFERRED ADMISSION

Students who want to postpone enrollment need only submit a request in writing by the assigned reply deadline. Students who undertake academic work in the interim may not automatically defer enrollment, but must reactivate their applications by submitting official transcripts for review.

ADVANCED PLACEMENT/STANDING

Placement in advanced courses is determined by individual performance on departmental examinations, which may be oral or written, or on the Advanced Placement and Achievement Tests of the College Entrance Examination Board. In addition, each score of 4 or 5 on an A.P. test will be credited with a value of one course-unit at Clark. Advanced standing may also be earned by transfer; presentation of an official transcript of college-level course work already completed is required. A maximum of one semester's credit (4 units) may be assigned to freshmen enrolling with advanced standing.

TRANSFER CREDIT

Normally, credit is given for academic courses in the liberal arts previously taken at accredited colleges and universities and for Advanced Placement Test results as described above. Credit for courses at nonaccredited institutions is granted on a provisional basis to be evaluated upon successful completion of two semesters of full-time work at Clark. No credit is given for any course completed with a grade lower than C-minus.

Evaluation of credits for college courses completed elsewhere is made at the time of admission or upon receipt of final transcripts, and is used in planning a course program and in provisional classification as a freshman, sophomore, or junior. A maximum of 50 percent of both the Clark B.A. degree and the departmental major requirements may be accepted in transfer, and normally a minimum of two academic years at Clark is necessary for completion of degree requirements. Matriculated students should refer to the section on residency requirements.

TRANSFER APPLICANTS

Clark welcomes applications for admission with advanced standing from students attending two- and four-year institutions. The majority of students admitted enter at the junior level, although many transfer to Clark with sophomore and advanced freshman standing.

Of special interest to transfer candidates are the University's B.A./M.A. program options in the Environment, Technology and

Society (ETS) Program and in the Program for International Development and Social Change. The application deadline is April 15 (November 15 for places available at midyear).

TRANSFER REQUIREMENTS AND NOTIFICATION

All applicants for transfer are required to submit evidence of good standing, complete transcripts of all previous academic work—secondary level and beyond—including the Scholastic Aptitude Test if taken, and any other information requested by the Admissions Committee, such as recommendations and course description catalogs. Decisions are announced as soon as possible depending upon completeness and scope of records.

CAMPUS VISITS AND INTERVIEWS

Prospective students are encouraged to visit the campus and are invited to write or call the Admissions Office (617-793-7431) for details. Interviews, both on and off campus, are available with members of the admission staff or alumni by appointment in the fall and winter. Interviews are not an admission requirement.

Undergraduate Financial Aid

GENERAL INFORMATION

Financial aid is allocated on the basis of financial need and academic performance. Special talent in music, art, athletics, and other areas, as well as leadership ability also are considered. Aid is packaged—i.e., a combination of scholarships, grants, loans, and/or part-time employment. The Office of Financial Aid assesses each student's financial circumstances and need through a uniform analysis of the Financial Aid Form (FAF) and adjustments are made in accordance with University policies and procedures. The assessment takes into account family income and assets, age of parents, financial commitments to other dependents and members of the family, and other special circumstances.

The University expects that a student's resources for education will come first from family and his/her own savings and earnings. The University will make every effort to assist the student in obtaining the difference between the total cost and expected family resources. No student should fail to apply for admission to Clark University because of the inability of his/her family to pay total educational costs.

INDEPENDENT SOURCES OF ASSISTANCE

All applicants for financial assistance are urged to pursue independent sources of financial assistance. Clark cannot replace outside funds for which a student is eligible but fails to apply. Scholarships are often awarded to graduating seniors by high schools and/or private scholarship agencies in students' local communities. Additional information usually is available in guidance offices.

Residents of Massachusetts are expected to apply for a *State Scholarship*. To apply, students must complete state Financial Aid Forms (FAF), which may be obtained from guidance counselors or financial aid offices. Out-of-state students should investigate the possibility of using state scholarships at Clark.

An important source of federal financial assistance is offered in the form of *Pell Grants*. These grants, which vary in amounts up to \$2,100 per year, are available to students who demonstrate financial need according to Federal regulations. All applicants for financial aid are required to apply for a Pell Grant. Students may apply for a Pell Grant by checking the appropriate item on the FAF.

For those who need additional help, the *Guaranteed Student Loan Program* may be utilized as a resource to supplement grant, scholarship, and loan. Offered through lending institutions, the program is partially subsidized by federal funds. Additional information and application materials are available at local lending institutions. Information also may be obtained at the Office of Financial Aid.

In addition to the Guaranteed Student Loan, there are various supplemental loans available to the families of students attending Clark University. These programs offer both fixed and variable interest rates with up to fifteen years to repay. No collateral is necessary. However, applicants must be creditworthy and meet a standard debt service to income test. More detailed information may be requested from the Office of Financial Aid.

Veteran's Benefits may be available for service veterans and children of deceased and/or disabled veterans. Eligibility can be determined by contacting your local Veterans Administration Office.

Rehabilitation Assistance may be available for students who qualify for educational benefits. Information concerning rehabilitation services can be obtained at the State Rehabilitation Office.

Clark University Financial Assistance

Clark University makes a commitment to entering students during their freshman year and in each subsequent year at Clark as long as they continue to demonstrate the same amount of financial need, continue to meet the standards of satisfactory academic progress, have filed all necessary application materials by the required deadlines, and have not exceeded program limitations of financial assistance, and as long as Federal funding to Clark's Office of Financial Aid continues at the same level. Although any Clark student may apply for assistance as an upperclassman, level funding is guaranteed only to those students who received aid their first year at Clark and have met the above requirements.

Assistance at Clark is "packaged" in the form of scholarship, loan, grant, and/or employment from the following sources:

Alumni and Friends Scholarships—a portion of the University income is reserved for this purpose and gifts from alumni, parents, and friends provide additional scholarship funds.

Supplemental Educational Opportunity Grants—part of a federal program of assistance to college students demonstrating exceptional financial need. Continued support of this fund is contingent upon annual congressional allocations.

Perkins' Loans—long-term loans that bear no interest until six months after a student ceases to be at least a half-time student at an institution of higher education. At that time, interest begins to accrue at the annual rate of 5 percent on the unpaid balance. A person borrowing from this fund will repay the amount in equal installments of at least \$30 per month principal over an extended repayment schedule of up to ten years. Continued support is contingent upon annual congressional allocations.

Student Employment—available during the summer and part time during the academic year. The basic source of funds for employment is the Federal College Work-Study Program. Jobs, offered as part of the package of financial assistance, and placements are handled by the Office of Financial Aid. All students, regardless of financial need, may consult the job listings in the Office of Financial Aid for part-time employment.

ENDOWED SCHOLARSHIPS

Most grants awarded by the University are designated Alumni and Friends Scholarships. Funds for these scholarships are derived from endowed funds. (Because of the various restrictions placed on these funds, it is the policy of the University to select eligible recipients. Students should not apply directly.)

The Reginald Bryant Allen Fund

The Alumni Group Scholarship

The Alton Anderson Endowed Scholarship Fund

The Association of Colored Peoples Scholarship Fund

The Richard Barnes Memorial Scholarship Fund

The William H. Blake ('15) Scholarship Fund

The B'nai B'rith Scholarship

The Richard L. Boffoly Endowed Scholarship Fund

The Stella Malkasian Boy Scholarship Fund

The Haven D. Brackett Student Aid Fund

The Gertrude and William Brodie Award

The Charles W. and Annie L. Bruninghaus Fund

The Reina and Isadore Chaiklin Scholarship Fund

The Clark University Faculty Women's Club Scholarships

The Gloria Woolson Cockburn Memorial Scholarship Fund

The Cohn-Anderson Memorial Fund

The Celia Daspin Memorial Scholarship Fund

The Depaul-Cunningham Student Loan Fund

The Gladys Gunderson Diliberto Fund
 The Ruth and Loring Dodd Scholarship Fund
 The Thomas J. Dolphin Scholarship Fund
 The Theodore T. and Mary E. Ellis Fund
 The Albert C. Erickson Scholarship
 The Leon E. Felton Memorial Scholarship Fund
 The A.D. Ross Fraser Scholarship
 The Julian S. Freeman Memorial Scholarship Fund
 The Aaron Fuchs Memorial Scholarship Fund
 The Lillian and Selig Glick Scholarship Fund
 The Paul S. Goldman Memorial Scholarship
 The Wallace W. Greenwood Scholarship Fund
 The Madeline T. and Winthrop G. Hall International Fellowship
 The Bertram L. and Bessie T. Handleman Fund
 The Frank H. Hankins Scholarship
 The High School Basketball Tournament Scholarship
 The Lennard A. Hill ('57) Memorial Scholarship Fund
 The Gertrude and Eva Hillman Scholarship
 The Frances Tufts Hoar Fund
 The Ruth G. Hodgkins Scholarship Fund
 The Drs. Burton P. and Herbert H. Hoffner Endowed
 Scholarship Fund
 The Frederic W. Howe Jr. Scholarship Fund
 The Ann P. Hubbard Memorial Scholarship Fund
 The Gordon A. Hubley Fund
 The M. Hazel Hughes Scholarship
 The Lillie May and Raymond S. Huntington Scholarship Fund
 The Jean E. and Theodore H. Hurwitz Scholarship Fund
 The Howard Bonar Jefferson Endowed Scholarship Fund
 The George N. Jeppson Scholarship Fund
 The Johnson-McLean Scholarship Fund
 The Kappa Phi Scholarship Fund
 The Ella O. Keene Scholarship Fund
 The George F. Kneller Scholarship Fund
 The Levi Knowlton Fund
 The Dr. Edmund Randolph Laine Scholarship Fund
 The David Ashley Leavitt Memorial Scholarship Fund
 The Joseph Leavitt Scholarship Fund
 The Dwight E. Lee Scholarship Fund
 The Elizabeth T. Little Scholarship Fund for Women
 The Homer Payson Little Scholarship in Geology
 The Livermore and Ambulance Drivers Scholarship
 The Robert H. Loomis Scholarship
 The Lieutenant Louis J. Luvisi Jr. Scholarship Fund
 The Chester W. Malmstead Loan Fund
 The Joshua Morrison Scholarship Fund
 The Nazareth Nanigian and Manasseh Nanigian Memorial
 Scholarship Fund
 The Alice Friend Newton Memorial Scholarship

The Norton Company Scholarship
 The Nunnemacher Endowment Fund
 The Gerim M. Panarity Scholarship Fund
 The Abraham S. Persky Scholarship Fund
 The Joseph Persky Scholarship Fund
 The Mary E. and Irene L. Piper Scholarships
 The Gerard Pomerat Scholarship Fund
 The Charles B. Randolph Fund
 The Helen Brewster Randolph Memorial Scholarship
 The Jennie L. Richardson Scholarship
 The William Richardson Scholarship
 The Elliott Stephan Sahagian ('67) Scholarship Fund
 The Sanford Memorial Scholarship
 The Lillian and Samuel Schanberg Memorial Scholarship Fund
 The Fredric T. Sewall Scholarship Fund
 The Dr. David M. Shor Memorial Scholarship Fund
 The Jacob L. Shor Memorial Scholarship Fund
 The Henry L. Signor Scholarship
 The Abraham Solomon Scholarship Fund
 The Harry D. and Anita Solomon Endowed Scholarship Fund
 The Saul Reuben Stein Student Loan Fund
 The William T. and Barbara H. Stimson Scholarship Fund
 The Berge Tashjian Scholarship Fund
 The Russell S. Thompson ('18) Scholarship Fund
 The Michael Thomas Tucker Memorial Scholarship Fund
 The Undergraduate Scholarship Fund
 The Benjamin R. and Grace F. Vanderford Student Aid Fund
 The Henry A. Willis Scholarship
 The Harold C. Wingate Memorial Scholarship Fund
 The George M. and Bee Wolfe Scholarship Fund

APPLICATION PROCEDURES

In addition to filing an application for admission, all freshman candidates applying for financial assistance must submit a completed Financial Aid Form (FAF) to the College Scholarship Service by February 15, and direct that a copy be forwarded to Clark University. The Financial Aid Form may be obtained from the secondary school guidance office. Offers of financial assistance will be made simultaneously with, but independent of, the decision of the Admissions Committee. Each recipient is required to verify the information reported on the FAF by filing a copy of the parents' and student's most recent federal income tax return form. Early decision candidates should file an Early Version FAF by December 15. This form will be sent to those who indicate on their admissions applications they will be applying for aid.

Prospective transfer students who are requesting financial assistance should submit the FAF to the College Scholarship Service at the same time application is made for admission. Each transfer student must submit a signed copy of the parents' and student's latest federal

income tax return to the Office of Financial Aid and request a Financial Aid Transcript from all colleges that the student previously attended. Award notification will be made after acceptance to the University. Applicants will not be required to post an admission deposit before receiving a financial aid decision. Awards are made as funds allow.

Upperclassmen must reapply annually for financial assistance by submitting an updated FAF to the College Scholarship Service and an Application for Upperclass Students to the Office of Financial Aid by March 1. In addition, a signed copy of the parents' and student's previous year's federal income tax return form must be filed with the Office of Financial Aid by April 15. Clark financial assistance is renewed as long as the applicant meets the requirements described in the first paragraph of this section.

Any new student interested in financial assistance should request a copy of the Clark University Financial Aid Guide from the Admissions Office, which contains all pertinent financial aid information.

The Graduate School

General Information

When Clark University was established in 1887, it was strictly a graduate institution. In fact, Clark was the second graduate school in America (after Johns Hopkins). Over the years, Clark's graduate school has trained leading scholars and practitioners in a wide array of fields. It also has been at the center of major research breakthroughs in disciplines as diverse as physics, geography, and psychology.

Clark offers graduate programs leading to doctoral and master's degrees. Admission to Clark's graduate programs is open to holders of the bachelor's degree or its equivalent, and is determined on a competitive basis. All programs are administered by the Graduate Board. Candidacy for the master's degree generally requires one or two years of study and candidacy for the Ph.D. at least four years of study, although requirements vary across departments.

Doctor of philosophy degrees are offered in biology, the biomedical sciences, chemistry, economics, geography, history, physics, and psychology. Doctoral students in the biomedical sciences and in psychology may also enroll in courses given cooperatively with the University of Massachusetts Medical School, the Worcester Foundation for Experimental Biology, and Worcester Polytechnic Institute. Doctor of education degrees in special education and in educational management are offered by the Department of Education. Also offered is the individually designed interdisciplinary Ph.D. program, which is designed by the student and a faculty committee.

Master of arts degrees are offered in the fields of biology, chemistry, education, English, environmental affairs, geography, history, international development, physics, and psychology. The master of business administration degree is offered by the Graduate School of Management and the master of health administration is offered by the Graduate School of Management in conjunction with the University of Massachusetts Medical School. Through the College of Professional and Continuing Education (COPACE), Clark also offers the master of public administration and the master of arts in liberal arts degrees.

Departments that do not, at present, accept candidates for graduate degrees may offer courses suitable for inclusion in a program of graduate study. In addition, postdoctoral training is conducted in geography, psychology, and the sciences.

There is a wide variety of financial support available for incoming graduate students. Most departments offer teaching assistantships, fellowships, and research assistantships. Often these come with a living stipend as well as tuition grants. Some specific examples of fellowship awards are listed at the end of this section. Additional information about departments and their offerings may be found in the section entitled *Departments and Courses*.

INQUIRIES

Inquiries from American and foreign students concerning specific programs of graduate and postdoctoral work should be addressed to the chair of the department concerned. Please check catalog section, *Departments and Courses*, for names of department chairs and program directors.

ADMISSION TO GRADUATE SCHOOL PROGRAMS

Admission to the Graduate School may be granted *only* by the dean of the Graduate School acting for the Graduate Board on the recommendation of a department or program of the University. An official letter from the graduate dean is the formal notification procedure.

Application: An applicant from an American institution should communicate with the appropriate department or program head. The applicant will be provided with an application form, which, accompanied by a \$35 application fee, should be returned to the department or program. In addition, the applicant should arrange the forwarding of an official transcript of all undergraduate and any subsequent academic work and three letters of recommendation from persons who are competent to judge qualifications for graduate study.

Department or program heads may request the submission of additional material, and most require a record of attainment in the Graduate Record Examination given by the Educational Testing Service, Princeton, New Jersey. All applicants are urged to submit their scores on the Graduate Record Examination verbal, quantitative, and advanced tests. Applicants to the Graduate School of Management

programs (master of business administration or master of health administration) are required to take GMAT rather than GRE examinations.

In addition to an application and \$35 fee, a foreign student should provide a certified English translation of the official transcript, evidence of English proficiency (TOEFL), at least three letters of recommendation, and a statement concerning the applicant's financial resources or agency support.

Application Deadlines:

Psychology: January 30 for forthcoming fall

Management: One month prior to each semester
(July 31, November 30, March 31)

All others: February 15 for forthcoming fall

Application materials cannot be returned. A *Financial Aid Form* must be submitted through the College Scholarship Service before awards can be made.

Admission: Admission to the Graduate School is valid for a specified time only and lapses after that period. If a student is admitted while still a candidate for a degree from another institution, an updated transcript noting the conferment of that degree must be sent directly to the dean of the Graduate School.

Part-time Admission: Part-time graduate study is possible in some departments; see section entitled *Departments and Courses*.

Special Graduate Students: Admission as a special graduate student (nondegree candidate) is a simple enrollment process handled through the Registrar's Office. The grading system for these students is: A-F (with plus and minus) or Pass/Fail.

MASTER OF ARTS

Residence: An academic year (eight semester-courses) of study in residence is a minimum requirement for a master's degree. Individual departments or programs may require longer periods of residency. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty.

Foreign Language: Language or other special requirements are included in the department listings in this catalog.

Candidacy: Application for admission to candidacy for a master's degree must be filed with the dean of the Graduate School not later than the first week of the last full semester the student expects to spend in residence as a candidate for a degree. Forms are obtainable at the Graduate School Office. Applications will be considered by the Graduate Board when the student has completed one semester of full-time graduate work or its equivalent in residence at the University and obtained the written endorsement of the major department or program.

Candidacy for the degree of master of arts is valid for three years after admission to candidacy. Candidacy may be renewed once, for

satisfactory reasons, for an additional period of three years on vote of the Graduate Board.

Course and Examination Requirements: Each student must complete at least eight semester-courses in a program approved by the department. One course may be a research course devoted to the preparation of the thesis. Credit for a maximum of two courses at another institution may be approved by the dean of the Graduate School upon recommendation of the department.

Each candidate must pass such written examinations as are required by the major department and a final oral examination by a committee of three or more, one of whom must be a member of the Graduate Board.

Thesis: The thesis is written on a topic in the field of the student's special interest under the supervision of a member of the department and in a style, length, and format that is appropriate to the problem being researched. Regulations for submission of theses and degrees are available from the department and the Graduate School Office.

Diploma Fee: The fee for the master of arts degree is \$25. It covers the cost of the diploma, publication of the precis in *Dissertations and Theses*, and binding of the library copy. It is payable when the thesis is deposited with the format adviser. Students who do not write a thesis, including those receiving the degree on the alternative program, must pay this fee no later than the date on which theses are due to the University format adviser.

Alternative Program: A candidate for the degree of master of arts may be recommended for the degree without a thesis after passing a preliminary doctoral examination.

Nonresident Students: Continuing students who are not registered for courses at Clark are required to pay a nonresident fee of \$100 per semester to maintain active status. If fees are unpaid, the student will be dropped from the degree program. (Fees double upon renewal of candidacy.) For information on nonresident loan deferment status, see the *Graduate Tuition* section.

MASTER OF ARTS IN EDUCATION

The residency, candidacy, course, examination, and diploma fee requirements are the same as those listed for the degree of master of arts.

Thesis: Students may choose one of three options, subject to the approval of the Department of Education. They may choose to: (1) prepare a thesis as required for the M.A. degree; (2) elect two additional subject-matter courses; or (3) elect a research seminar in which papers are prepared and presented to fellow students and staff.

Further information concerning the degree of master of arts in education may be found under the Department of Education.

MASTER OF ARTS IN LIBERAL ARTS

This degree is offered through the College of Professional and

Continuing Education. For further information, contact the College of Professional and Continuing Education, Clark University.

MASTER OF BUSINESS ADMINISTRATION

This degree is offered through the Graduate School of Management. For further information, see listings under the Management section.

MASTER OF HEALTH ADMINISTRATION

This degree is offered through the Graduate School of Management in conjunction with the University of Massachusetts Medical School, Worcester. For further information, see listings under the Management section.

MASTER OF PUBLIC ADMINISTRATION

This is offered as a joint program of the Department of Government and the College of Professional and Continuing Education. For further information, contact the College of Professional and Continuing Education, Clark University.

DOCTOR OF EDUCATION

The program leading to the doctor of education emphasizes human development, learning, and the social context of education as they relate to curriculum, instruction, evaluation, and the management of educational programs and institutions. The requirements for this degree closely parallel those for the degree of doctor of philosophy (see below). See catalog section on Department of Education for further information.

DOCTOR OF PHILOSOPHY IN BIOMEDICAL SCIENCES

The Biomedical Sciences Ph.D. Program began in 1975 with the recognition that certain individuals without a standard academic background, but with previous research experience and an outstanding aptitude for independent research, may benefit from a relatively unstructured program leading to the Ph.D. degree. This is a cooperative program involving Clark University, the University of Massachusetts Medical School, Worcester Foundation for Experimental Biology, and Worcester Polytechnic Institute. It utilizes the faculty, facilities, and varied research interests in the biomedically related sciences in the Worcester area. The primary criteria for admission are research ability and potential, and evaluation of applicants is based largely on evidence of their previously performed research. Award of the Ph.D. requires passing of a preliminary examination and presentation and defense of a research thesis. Competence in the major field in preparation for the preliminary examination can be achieved through independent study, directed study, or formal courses. The Ph.D. degree may be awarded by either Clark University or Worcester Polytechnic Institute, although dissertation research may be done at any of the participating institutions under the

sponsorship of a faculty member from that institution. Areas for conducting of dissertation research reflect the varied research programs of faculty from the participating institutions. These include, but are not limited to: cellular and molecular biology; cell senescence; metabolism, endocrinology, and immunology; pharmacology and experimental pathology; reproductive biology, physiology, neurobiology, and behavioral science; biological engineering, related to nitrogen fixation and development of new symbiotic systems with blue-green algae; bio-mass and bio-energy (silviculture and fermentation technologies).

Admission: The primary criterion used in selection of students for this program is the demonstrated capacity of the applicant to do independent research. In addition to the application form, applicants submit official transcripts of undergraduate and graduate work, Graduate Record Examination (GRE) scores, three letters of reference, and evidence of outstanding research ability (e.g., publications, abstracts, etc.). More complete information may be obtained from the program director.

Applications and all supporting documents should be submitted to the Director, Biomedical Sciences Ph.D. Program, c/o Personnel Office, Worcester Foundation for Experimental Biology, Shrewsbury, MA 01545. Application may be made at any time during the year.

DOCTOR OF PHILOSOPHY

Only well-qualified candidates with proven ability in their special fields of study will be encouraged to proceed to the degree of doctor of philosophy.

Residence: The minimum requirement is one year of full-time study (eight semester-courses beyond the M.A.) or its equivalent in part-time work, in residence.

If the degree of master of arts has been earned at Clark, this requirement is in addition to the residence requirement for that degree.

Foreign Language: Each graduate department sets its own language or related requirements as the student's field of research may demand and must report such requirements in each case to the dean of the Graduate School. If a language is required, either a testing service or on-campus tests are employed at the discretion of the department.

Preliminary Examination: Upon completion of preparation in the fields of study, a prospective candidate takes a preliminary examination set by the major department. This examination may be written or oral, or a combination of both. The chair of the department may invite other scholars from within or outside the University to participate in the examination.

Candidacy: An application for admission to candidacy should be filed when the applicant has: (1) completed two full academic years of graduate work or its equivalent in part-time work, including one year at Clark University; (2) completed the departmental requirements in a foreign language, (3) passed a preliminary examination in the chosen field of study, (4) obtained the written endorsement of the

major department. Application forms can be obtained from the Graduate School Office.

Candidacy for the degree of doctor of philosophy is valid for three years after admission to candidacy. Candidacy may be renewed once, for satisfactory reasons, for an additional period of three years by vote of the Graduate Board.

Dissertation: A dissertation, which is expected to make an original contribution to a special field of knowledge, is required of each candidate. The dissertation, approved by the chief instructor or dissertation committee, is presented to the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 350 words, and a precis, not exceeding 75 words, both approved by the dissertation advisors, are also required.

Four weeks before the degree is to be conferred, the ribbon copy of the dissertation, together with two official title pages, an academic history, an abstract and a precis, must be delivered to the University format adviser. At the same time, one or more copies of the dissertation and of the abstract may be required by the major department. The title pages, precis, and academic history forms can be obtained from the format adviser. The ribbon copy of the dissertation must be typed as prescribed in *Format Regulations for Theses, Dissertations, and Research Papers* and *Suggestions for the Preparation of Doctoral Dissertations for Microfilming*. These instructions are available from the format adviser.

The dissertation and abstract become part of the permanent collection in the University library. A microfilm copy of each dissertation is made by University Microfilms, Inc., of Ann Arbor, Michigan, and is available for duplication on request to that company. The abstract is printed in *Dissertation Abstracts*; the precis is printed by Clark in *Dissertations and Theses*.

Articles published in refereed journals may be accepted in lieu of a dissertation with the approval of the department and the graduate dean. Requests for approval should include statements that attest to the originality and significance of the study.

Final Examination: An oral examination lasting at least two hours is required. Additional written examinations may be required if the major department so directs. The candidate is expected to defend the dissertation and, at the discretion of the examining committee, may be questioned on the entire special field of study. The oral examination is conducted by a committee of at least four members, composed of at least one member of the Graduate Board and such members of the department and nonmembers from within or outside the University as the chair may appoint. The chair notifies the dean of the Graduate School, at least one week in advance, of the time and place of the examination and the composition of the committee. The dean is authorized to invite any person from within or outside the University to be present and to assist in the examination.

Diploma Fee: The fee for the doctor of philosophy degree is \$85. It covers the cost of the diploma, hood, publication of the precis in the publication *Dissertations and Theses*, publication of the abstract in *Dissertation Abstracts*, and binding of the library copy of the dissertation. It is payable when the dissertation is deposited with the University format adviser.

Nonresident Students: Continuing students who are not registered for courses at Clark are required to pay a nonresident fee of \$100 per semester to maintain active status. If fees are unpaid, the student will be dropped from the degree program. (Fees double upon renewal of candidacy.) For information on nonresident loan deferment status see *Graduate Tuition* section.

POSTDOCTORAL STUDY

Postdoctoral students are classified in two categories. *Research Associates*, who work full time with designated members of the University staff on research projects, normally supported by grants, without formal teaching duties but with some responsibility for directing laboratory assistants; and *Postdoctoral Fellows*, who enroll in a formally offered postdoctoral training program.

GRADUATE ACADEMIC REGULATIONS

GRADING

The grades of A and B (with plus and minus) are acceptable for graduate credit; anything lower than a B- is not acceptable. A Pass/Fail grading option is possible, where "P" (pass) signifies that the student has performed at a B- or above level. Incompletes are awarded at the discretion of the instructor.

OFF-CAMPUS HOUSING AND BOARD

Off-campus rooms and apartments for both men and women are available in the immediate area of the University. A limited listing of current housing opportunities is posted in the International Programs Office and a book of current listings is maintained in the Housing and Residential Programs Office. Students are urged to arrive before registration to seek suitable off-campus housing in the area.

Graduate students are invited to take meals in the University dining halls under one of the food plans available. The Snack Bar also is available for single meals.

HEALTH INSURANCE

The University has made health insurance mandatory for all students enrolled in a graduate program. Students must either enroll in the Student Health Insurance Plan offered through the University or provide evidence that they have comparable coverage in another plan.

HEALTH SERVICE

Graduate students who wish to use the on-campus Health Service may do so by paying the health fee at the Health Service Office.

At that time they will be issued a Health Service Identification Card. For a description of the Clark University Health Service, see the listing under Student Services of the Undergraduate College.

Graduate Tuition and Other Charges

Full-time Graduate Students:

Tuition: \$11,000 per academic year (or \$5,500 per semester)

In departments that define a full load as four courses per semester, the per-course charge is \$1,375. The per-course charge varies in some departments according to their specific definition of a full program. Students should contact their department chairs to find out which scale applies.

Part-time Graduate Students:

Tuition is charged on a per-course basis according to the scale used in the student's department (generally, \$1,375 per course).

Special Graduate Students: (non-degree candidates)

Tuition: \$1,375 per course.

Tuition and fees differ in the following programs:

Contact the Graduate School of Management for further details on:

Master of Business Administration

Master of Health Administration

Contact the College of Continuing and Professional Education for further details on:

Master of Arts in Liberal Arts

Master of Public Administration

OTHER FEES—payable at registration:

Health Insurance (mandatory)

Single Students; estimated \$252

Student/one eligible dependent \$516

Student/two or more eligible dependents \$789

Health Service Fee (optional) \$100

Diploma Fee—payable at the time the thesis or dissertation is deposited with the Registrar.

Master's Degrees \$ 25

Doctoral Degrees \$ 85

Students who do not write a thesis or dissertation, including those receiving the degree through the alternative program, must pay this fee no later than the date on which theses are due to the University format adviser (generally, April 15).

NONRESIDENT FEES: \$100

Payable November 1 and March 1: \$100 per semester. All degree candidates who are not formally enrolled in course work must pay the nonresident fee each semester until the final copy of the thesis or

dissertation is approved by the University format adviser. If these fees are not paid by the close of the fiscal year, the student will be dropped from the program. (Fees double upon renewal of candidacy.)

Loan Deferment for Nonresident Students:

Nonresident graduate students who are completing their thesis or dissertation on a *half-time* basis are limited to two years of student deferment status on their college loans. Nonresidents completing their thesis or dissertation on a *full-time* basis are limited to *one year* of student deferment status.

Billing Policy:

Tuition and fees are due within 30 days of date of issuance of invoice. Accounts 30 days or more past due are assessed interest at the rate of 1.5 percent per month (annual rate of 18 percent).

Late Registration Fee:

\$ 25

A late fee of \$25 is charged if registration is not completed by the end of the first week of the semester.

Refund:

Withdrawal from the University requires formal notice, *in writing*, to the dean of the Graduate School. A refund will be made according to the date the dean receives the withdrawal notice. No refunds are made upon withdrawal from a course or courses, only upon withdrawal from the University. Refunds are as follows:

Prior to the start of classes:	100%
First week of classes:	80%
Second week of classes:	60%
Third week of classes:	40%
Fourth week of classes:	20%
After fourth week of classes:	0%

There is no refund on other charges, except board, when a student withdraws from the University.

FINANCIAL ASSISTANCE

U.S. applicants for admission who request financial assistance are required to file a Financial Aid Form with the College Scholarship Service as part of their application. This form, along with specific instructions, should be requested by contacting the applicant's prospective department or program. Allocation of financial aid is not only based on an evaluation of the student's need.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided for well qualified students by the University from endowed funds and from other sources. Financial aid to graduate students also is available in

the form of grants from a number of special funds and, in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Students who receive awards must obtain permission from the department before accepting employment.

Application for a scholarship or fellowship to begin in September should be made before February 15 to the chair of the department or director of the program in which the applicant expects to do major work. Late applications, after endorsement by the department, go to the dean of the Graduate School for final approval.

RESEARCH FELLOWSHIPS

These fellowships may be awarded to graduate students who have fulfilled their residence requirements and who are pursuing a full-time doctoral program on campus.

TEACHING ASSISTANTSHIPS

Teaching assistants are assigned a variety of duties according to the needs of the department. Responsibilities include conducting discussion sessions, supervising laboratory sections, holding tutorial sessions, and grading papers and projects. Assistantships typically involve a commitment of approximately half time (an average of 17-1/2 hours a week). Tuition is remitted, and a usual stipend of \$5,500 to \$7,000 for eight months is awarded.

Note that the departments of biology, chemistry, economics, English, geography, history, physics, and psychology require teaching experience for graduate degrees.

ASSISTANTSHIPS

Assistantships are available in several departments. Assistantships involve a variety of services including research with appropriate stipends and usually provide the student with experience which will be useful in later professional work.

GRADUATE FELLOWSHIP AND SCHOLARSHIP FUNDS

Stipends for fellowships and scholarships are provided by:

The Alumni Association Fund

**The Association of Colored People's Memorial Scholarship Fund
for Graduate Students**

The George S. Barton Fund

The Elnora W. Curtis Fund

The Eliza D. Dodge Fund

The H. Donaldson Jordon Award in History

The Joseph F. Donnelly Memorial Fund

The John White Field Fund

The Austin S. Garver Fund

Graduate School Scholarship Fund

The George Frisbie Hoar Fund

**The M Howard and Frances Freedman Jacobson Graduate
Fellowship Fund**

The Ella O. Keene Scholarship Fund

The Myers Fund

The David J. Ott Scholarship

The Charles H. Thurber Fund

For further information about these funds, contact the Graduate School Office.

GRADUATE LOANS

Loans, bearing interest at ten percent per year after completion of residency, are available on a limited basis for full-time graduate students upon registration. Applications are available at the Graduate School Office.

LOAN FUNDS

The Mary S. Rogers Scholarship and Loan Fund

The Mary M. Thurber Fund

The United States Steel Foundation Fund

For loans from these and other sources that may become available, application should be made at the Graduate School Office.

DEPARTMENTAL FUNDS

The Wallace W. Atwood Research Fund. The income from this fund may be used at the discretion of the staff in the Graduate School of Geography for the promotion of field studies in geography by any member of the staff, or any one of the alumni holding a graduate degree from the Graduate School of Geography, or for the publication of results of such research work.

The Chester Bland Fund. The income from this fund preferably is used to provide aid to a promising student, either in residence or engaged in research elsewhere, under the direction of the Department of History. It also maybe used to defray the expense of visiting lecturers or of departmental research.

The Wallace W. Greenwood Fund. The income (only) is to be divided between the Departments of Physics and Chemistry and to be used for any purpose within the scope of these two department.

The G. Stanley Hall Foundation Fund.

The Morton L. "Sonny" Lavine Foundation is a memorial to Lieutenant Lavine of the United States Army, World War I. The income is to be used for the promotion of research in the Department of History.

The Libbey Fund, bequeathed to the University by Mary E. Libbey, is to establish a fellowship in physical geography and to aid the department in that field.

The James A. Maxwell Fund.

The Clara A. Mayo Memorial Fund, established by Joseph A. Weiss in memory of his daughter Clara A. Mayo (Ph.D. 1959). The fund is to be used to provide assistance to women graduate students in the Psychology Department.

Further information about developmental funds is available through the Graduate School Office.

Departments and Courses

American Studies

PARTICIPATING FACULTY

John J. Conron, Ph.D., *program director*: American literature, American studies, American landscape

James F. Beard Jr., Ph.D.: American literature, American studies, American fiction, twentieth-century American fiction and drama

George A. Billias, Ph.D.: colonial American history, comparative history, military history

John C. Blydenburgh, Ph.D.: elections, polling, national politics

Martyn J. Bowden, Ph.D.: cultural humanistic and historical urbansocial geography

James P. Elliott, Ph.D.: American literature, literature and film, contemporary narratives, editing

Bonnie Lee Grad, Ph.D.: nineteenth- and twentieth-century art

Douglas L. Johnson, Ph.D.: cultural ecology, arid lands management

William A. Koelsch, Ph.D.: history of geography, environmental history

Sharon Krefetz, Ph.D.: urban politics, suburban politics, women and politics

Robert J. Ross, Ph.D.: urban studies, political sociology, political economy, social policy

Maren E. Stange, Ph.D.: communications, American studies

AMERICAN STUDIES CONCENTRATION

The American Studies Program at Clark is neither a department nor a major but a *concentration* of seven required courses designed both as an extension of traditional majors and as a coherent undertaking in itself.

Concentration in the American Studies Program offers an interdisciplinary approach to the study of those human values that define American culture and variously manifest themselves in physical, social, and intellectual environments—in events, in institutions, and in the arts (primarily literature, painting, film, and architecture). The concentration has two aims. One is to enable students to analyze closely a variety of “texts” (a group of people, a house, a poem) and to place these in a cultural “context,” which brings them into relation with each other. The other is to enable students to arrive at an understanding of American culture as a pattern of values, which permeates American space and changes over time.

Since this course of study is not in itself a discipline but rather a conversation between disciplines, the concentration is based on a conviction that the basis of this conversation is fluency in—or at least acquaintance with—traditional disciplines in the humanities and the social sciences. Students are therefore expected to augment their major discipline with introductory work in two other disciplines. They are further expected to integrate and focus their study of American culture in the program offerings. Finally, they are encouraged to study, beyond the introductory level, topics of interest in the more than thirty courses

on American subjects offered at Clark and at affiliated institutions.

Students concentrating in American studies are required to take:

- 1) three core courses: *Introduction to History and American Studies*; *American Culture and Society, 1820-1860*; and *American Thought and Culture Since 1860*.
- 2) four courses in either an American history/literature or an American history/geography sequence. Students interested in the American history/literature sequence would elect two of the following history courses: 200, 201, 202, 206, 208, 209, 219, or 221; and both semesters of English 101. Students interested in the American history/geography sequence may include any two of the history courses listed above and two of the following geography courses: 252, 253, 255, or 272.
- 3) senior level work in courses of an interdisciplinary nature such as the existing cluster courses on landscape, sport, and culture and space that have an American focus, or a senior seminar. Consultation with the program director in senior level course work is strongly recommended.

AMERICAN STUDIES ELECTIVES

More than thirty courses in American subjects are taught at Clark and affiliated institutions. A list of the courses is available in the History and English Departments.

COURSES

INTRODUCTION TO HISTORY AND AMERICAN STUDIES/ Seminar

An introduction to basic problems of interdisciplinary study and historical method as revealed in American issues and writings. The nature of literary, historical, and sociological explanation of individual and group behavior is examined in the context of the disciplines of history and literature. Autobiography, biography, family history, narrative, fiction, and historiographical writings are read and discussed. Refer to course listing under English and History.

Mr. Formisano, Mr. Ford

Offered every year

AMERICAN CULTURE AND SOCIETY, 1820-1860/ Discussion

An interdisciplinary study of the emergence of America as a nation and as a distinctive culture. Attention is paid to the cultural geography, the arts (primarily literature and painting), and to some significant political and social issues of the period. Some of the germinal works in American studies (Leo Marx's *The Machine in the Garden* and R.W.B. Lewis's *The American Adam*, for example) are read to provide contexts for the study of representative cultural and social expressions of the period. The course includes field trips. Refer to course listing under English and History.

Mr. Conron, Ms. Stange

Offered every year

AMERICAN THOUGHT AND CULTURE SINCE 1860/ Discussion

Examines selected cultural patterns and themes in American thought from the Civil War onward. Readings and discussions draw on multiple disciplinary perspectives.

Mr. Conron, Ms. Stange

Offered every year

Ancient Civilization

PROGRAM FACULTY

Paul F. Burke Jr., Ph.D., *program coordinator*: Greek and Latin language and literature, Classical mythology, Classical art and archaeology, ancient history
Daniel C. Shartin, Ph.D.: history of ancient philosophy, Plato, Aristotle
Rhys F. Townsend, Ph.D.: ancient Greek art and architecture, underwater archaeology, Classical tradition in Western art, early Christian and Byzantine art

PROGRAM AND MAJOR IN ANCIENT CIVILIZATION

The Program in Ancient Civilization consists principally of courses offered by the three primary faculty participants whose scholarly fields are art history, classics, Jewish studies, and philosophy. Courses offered by other Clark faculty that fall into the general category of ancient civilization will be cross-listed as available, and courses from other consortium colleges may be used to enhance this major.

The program offers an undergraduate major and makes available courses covering the entire spectrum of ancient Mediterranean culture including Greek, Hebrew, and Latin languages. Emphasis throughout the program is placed on developing familiarity with the ancient world for a sound understanding of the roots of modern Judaeo-Christian culture. The purpose of the major in particular is to supply the student with a sound interdisciplinary knowledge of the ancient Greco-Roman and Judaeo-Christian roots of Western civilization. Majors are expected to acquire a working knowledge of at least one of the principal languages of the ancient Mediterranean (Classical Greek, Hebrew, or Latin); this language component of the major program insures direct access to the culture, literature, philosophy, and history of the ancient world. Program faculty are also anxious that their courses be accessible to the general undergraduate population in order that as many Clark students as possible may be introduced to the various aspects of the ancient world by the comprehensive series of courses brought together here. By incorporating art history, Jewish studies, and philosophy with what has been traditionally identified as classics (Greek and Latin language and literature), the Clark Program in Ancient Civilization presents established disciplines in a stimulating and original configuration.

MAJOR REQUIREMENTS

In order to graduate as an ancient civilization major, a student must complete successfully at least ten courses in ancient civilization. These courses must include:

1. at least two courses, not both in the same department, from the group of foundation courses:
Art History 101, *Introduction to Western Art I*
Art History 110, *Greek Art and Architecture*
Classics 111, *Roman Art and Architecture*
Classics 121, *Introduction to Greek Culture*
History 174, *The Jewish Experience*
Philosophy 121, *History of Western Philosophy*
2. at least one semester course at or above the intermediate level (language 103) in Greek, Hebrew, or Latin.
3. a one-semester senior seminar, to be taken preferably during the second semester of the senior year, to include the writing of a major research paper, and to be arranged in consultation with at least two members of the program faculty by the end of the junior year.

COURSES

A. ART HISTORY

101 INTRODUCTION TO WESTERN ART I

Refer to course description under Art History.

Mr. Townsend

Offered every year

105 THE AEGEAN WORLD

Refer to course description under Art History.

Mr. Townsend

Offered periodically

106 INTRODUCTION TO ARCHAEOLOGY

Refer to course description under Art History.

Mr. Townsend

Offered every other year

109 CLASSICAL MYTH AND THE GREEK IDEAL

Refer to course description under Art History.

Mr. Townsend

Offered every other year

110 ANCIENT GREEK ART AND ARCHITECTURE

Refer to course description under Art History.

Mr. Townsend

Offered every other year

111 ROMAN ART AND ARCHITECTURE

Refer to course description under Classics.

Mr. Burke

Offered every other year

114 ANCIENT CITIES AND SANCTUARIES

Refer to course description under Art History.

Mr. Townsend

Offered every other year

B. CLASSICS

GREEK

101/102 INTRODUCTORY GREEK

Refer to course description under Classics.

Mr. Burke

Offered every other year

103/104 INTERMEDIATE GREEK

Refer to course description under Classics.

Mr. Burke

Offered every year

LATIN

101/102 INTRODUCTORY LATIN

Refer to course description under Classics.

Mr. Burke

Offered every other year

103/104 INTERMEDIATE LATIN

Refer to course description under Classics.

Mr. Burke

Offered every year

CLASSICS COURSES TAUGHT IN ENGLISH

111 ROMAN ART AND ARCHITECTURE

Refer to course description under Classics.

Mr. Burke

Offered every other year

121 INTRODUCTION TO GREEK CULTURE, ART, AND ARCHAEOLOGY

Refer to course description under Classics.

Mr. Burke

Offered every other year

124 INTRODUCTION TO CLASSICAL MYTHOLOGY

Refer to course description under Classics.

Mr. Burke

Offered every other year

135 CLASSICAL GREEK TRAGEDY

Refer to course description under Classics.

Mr. Burke

Offered every other year

157 THE AGE OF NERO

Refer to course description under Classics.

Mr. Burke

Offered every other year

250 NARRATIVE IN ANCIENT HISTORICAL WRITING

Refer to course description under Classics.

Mr. Burke

Offered every other year

262 JEWS AND CHRISTIANS IN THE ANCIENT WORLD

Refer to course description under Classics.

Mr. Burke

Offered every other year

C. JEWISH STUDIES

HEBREW

101/102 ELEMENTARY HEBREW

Refer to course description under Foreign Languages and Literatures/Hebrew.

Staff

Offered every year

103 INTERMEDIATE HEBREW

Refer to course description under Foreign Languages and Literatures/Hebrew.

Staff

Offered every year

104 INTERMEDIATE/ADVANCED HEBREW

Refer to course description under Foreign Languages and Literatures/Hebrew.

Mr. Waldoks

Offered every year

JEWISH STUDIES COURSES TAUGHT IN ENGLISH

274 RABBIS, ROMANS, AND RUINS

Refer to course description under History.

Staff

Offered every other year

D. PHILOSOPHY

121 HISTORY OF ANCIENT PHILOSOPHY

Refer to course description under Philosophy.
Mr. Shartin

Offered every year

250 PLATO SEMINAR

Refer to course description under Philosophy.
Mr. Shartin

Offered every other year

251 ARISTOTLE SEMINAR

Refer to course description under Philosophy.
Mr. Shartin

Offered every other year

E. HISTORY

174 THE JEWISH EXPERIENCE

Refer to course description under History.
Staff

Offered every year

273 WOMEN IN ANTIQUITY

Refer to course description under History.
Staff

Offered every other year

F. COMPARATIVE LITERATURE

118 MASTERPIECES OF WORLD LITERATURE

Refer to course description under Comparative Literature.
Mr. Burke

Offered every year

120 THE EPIC JOURNEY

Refer to course description under Comparative Literature.
Mr. Burke

Offered every other year

G. GEOGRAPHY

174 THEMES IN CLASSICAL GEOGRAPHIC THOUGHT

Refer to course description under Geography.
Mr. Koelsch

Offered every other year

Art

See Department of Visual and Performing Arts.

Astronomy

See Department of Physics.

Biochemistry and Molecular Biology

PROGRAM FACULTY

M. Margaret Comer, Ph.D., *program director*: molecular genetics

John J. Brink, Ph.D.: metabolic regulation, pharmacology, neurochemistry

Frederick Greenaway, Ph.D.: bioinorganic chemistry, electron spin resonance

Donald J. Nelson, Ph.D.: protein chemistry, pharmacology

David L. Thurlow, Ph.D.: biochemistry, molecular biology

AFFILIATE FACULTY

George E. Wright, Ph.D.: pharmacology, drug-DNA polymerase interactions

PROGRAM

Biochemistry and Molecular Biology is an interdepartmental program sponsored jointly by the Biology and Chemistry Departments. It offers an undergraduate major designed to provide greater depth in this field than is provided by the departmental majors. The program is suitable for students who want to (1) pursue graduate studies in the field, (2) enter medical school with a strong background in a basic science, or (3) take laboratory or other science-related positions after graduation. Those wishing to major in Biochemistry and Molecular Biology must obtain the consent of the Program Committee.

PROGRAM REQUIREMENTS

The core curriculum consists of the following required courses:

Introduction to Calculus (Math 120 and 121)

Introduction to Physics (Physics 110 and 111 (or 112))

Introductory Chemistry (Chemistry 101 and 102)

Introduction to Biology (Biology 101 and 102)

Organic Chemistry (Chemistry 131 and 132)

Physical Chemistry I (Chemistry 160)

Biochemistry (Biochemistry 271 and 272)

Beyond this point the student has a choice of two tracks, emphasizing either Biochemistry or Molecular Biology.

Courses required for the Biochemistry track:

Genetics (Biology 118) or *Microbiology* (Biology 109)

Cell Biology (Biology 137) or *Animal Physiology*
(Biology 240)

Biophysical Chemistry (Biochemistry 164)

Bioanalytical Chemistry (Biochemistry 144)

Courses required for the Molecular Biology track:

Genetics (Biology 118)

Cell Biology (Biology 137) or *Microbiology*
(Biology 109)

Molecular Genetics (Biochemistry 228) or *Structure and*
Function of Nucleic Acids (Biochemistry 276)

Recombinant DNA (Biochemistry 231)

In addition, students must complete two additional courses from Biochemistry and Molecular Biology (or approved alternatives from Biology or Chemistry). Either research or formal courses are acceptable to fulfill this requirement. A minimum of three nonscience courses must be taken, one of which must be above the introductory level.

HONORS REQUIREMENTS

Students interested in the honors program should contact program faculty members they would like to do research with, and then apply in writing to the Program Director for admission. A *B* average is required. In addition to the course requirements listed above, honors candidates must complete a thesis (or publication) based on a research project, pass an oral thesis defense exam, and pass the biochemistry part of the American Chemical Society exams. Students are encouraged to begin their research in the summer following junior year.

COURSES

144 BIOANALYTICAL CHEMISTRY/ Lecture, Laboratory

This laboratory-oriented course presents both theoretical and practical aspects of quantitative analysis in biological systems. Topics include chromatography, electrophoresis, immunochemistry, ultracentrifugation, absorption and fluorescence, enzyme analyses, and radioactivity counting procedures. Prerequisite: Chemistry 132. In-class and final exams, laboratory reports.

Mr. Nelson

Offered every other year

164 BIOPHYSICAL CHEMISTRY/ Lecture, Laboratory

This rigorous course in physical chemistry, offered as an alternative to Chemistry 162, emphasizes the physical chemistry of biological systems: enzyme kinetics, spectroscopy of biological systems, macromolecules, transport processes, and X-ray diffraction. Prerequisite: Chemistry 160.

Mr. Nelson

Offered every other year

214 SPECIAL PROJECTS/ Laboratory, Discussion

Individual investigations involving laboratory and/or literature research.

Staff

Offered for variable credit.

215 HONORS COURSE/ Laboratory, Discussion

The honors course, primarily for a major seeking departmental honors in biochemistry, involves a laboratory research project and participation in departmental seminars.

Staff

Offered for variable credit.

228 MOLECULAR GENETICS/ Lecture, Seminar

Explores recent discoveries in the molecular genetics of prokaryotes and eukaryotes, with emphasis on new findings from recombinant DNA technology and DNA sequencing. Topics include protein synthesis, RNA transcription, gene regulation, repetitive DNA, gene cloning, split genes, gene families, transposable elements, oncogenes, and antibody gene rearrangement. Intended primarily for seniors and graduate students. Prerequisite: permission of instructor.

Staff

Offered periodically

231 RECOMBINANT DNA/ Lecture, Laboratory

An introduction to gene cloning techniques. Students will clone *Escherichia coli* DNA in a plasmid vector. Specific experiments include DNA purification, restriction enzyme digestion, agarose gel electrophoresis, DNA ligation, bacterial transformation, genetic characterization of recombinants, restriction mapping and DNA sequencing. Two laboratory periods per week. Prerequisites: Biology 118; Biology 109 or Biochemistry 271.

Ms. Comer

Offered every year

271 BIOCHEMISTRY I/ Lecture, Laboratory**272 BIOCHEMISTRY II/ Lecture**

This two-semester course provides a comprehensive and up-to-date survey of the field of biochemistry. The first semester covers cell metabolism and protein structure and function; the second semester deals with nucleic acid and protein metabolism and other topics. A laboratory component for the first semester acquaints students with methods and instrumentation used in biochemical research. Prerequisite: Chemistry 132.

Mr. Brink, Ms. Comer

Offered every year

Mr. Nelson, Mr. Thurlow

273 NEUROCHEMISTRY/ Lecture

The metabolic aspects of brain amines and biopolymers are considered in relation to neural function. Effects of drugs on memory processes are discussed in terms of biochemical mechanisms. Prerequisite: Biochemistry 272 or permission of instructor.

Mr. Brink

Offered every other year

275 PROTEIN CHEMISTRY/ Lecture

Discusses the structure and function of biologically important macromolecules. Particular emphasis is placed on proteins (enzymes and noncatalytic proteins), protein synthesis from nucleic acids, and the structure and function of biological membranes. Prerequisite: Chemistry 132.

Mr. Nelson

Offered every other year

276 STRUCTURE AND FUNCTION OF NUCLEIC ACIDS/ Lecture

This course addresses principles of nucleic acid structure, including types of helices, primary structure, secondary structure, and supercoiling. In the second half of the course, students will discuss papers relating the principles of structure to a particular function such as storage, expression of information, catalysis, and evolution of the genetic code. Prerequisite: Biochemistry 272.

Mr. Thurlow

Offered every other year

277 BIOCHEMISTRY OF DISEASE/ Lecture

Deals with the biochemical systems that are perturbed in metabolic regulatory processes as, for example, in cardiovascular disease, hormonal imbalance (diabetes), and genetic defects (Tay-Sachs disease). The effects of environmental influences represented by drug and nutrient components also are considered. Prerequisite: Chemistry 132 or permission of instructor.

Mr. Brink

Offered periodically

Biology

DEPARTMENT FACULTY

John T. Reynolds, Ph.D., M.P.H., *chair*: applied and environmental microbiology, environmental health

Vernon Ahmadjian, Ph.D.: botany, symbiosis, developmental biology

John J. Brink, Ph.D.: biochemistry, neurochemistry, nutrition

M. Margaret Comer, Ph.D.: molecular genetics

Joseph C. Curtis, Ph.D.: cell biology, electron microscopy, endocrinology

H. William Johansen, Ph.D.: phycology, marine biology

Linda M. Kennedy, Ph.D.: physiology, neurobiology, sensory function, taste

Todd P. Livdahl, Ph.D.: population biology, community ecology, evolution, biostatistics
Timothy A. Lyerla, Ph.D.: developmental and biochemical genetics, human genetic diseases
Nicholas S. Thompson, Ph.D.: animal behavior, evolutionary theory
Robert R. Weihing, M.D., Ph.D.: cytoskeletal proteins, cell motility

ADJUNCT FACULTY

Charles S. Blinderman, Ph.D.: history of biology, Darwinism, human evolution
Halina S. Brown, Ph.D.: health and risk assessment, environmental chemistry, regulatory toxicology
Stanley R. Herwitz, Ph.D.: hydrology, soil/water plant relationships, biogeography, field methods and instrumentation
Donald J. Nelson, Ph.D.: biochemistry, bioinorganic chemistry
Donald G. Stein, Ph.D.: psychobiology, recovery of function after brain damage
David L. Thurlow, Ph.D.: molecular biology

AFFILIATE FACULTY AND RESEARCH ASSOCIATES

H. Elliott Albers, Ph.D.
Robert Beck, Ph.D.
Clayton B. Cook, Ph.D.
Janice S. Edgerly, Ph.D.
Paul A. Erickson, Ph.D.
Michael J. Firko, Ph.D.
Jerome B. Jacobs, Ph.D.
David Kupfer, Ph.D.
Surindar Paracer, Ph.D.
John G. Torrey, Ph.D.

EMERITUS

Rudolph F. Nunnemacher, Ph.D.

UNDERGRADUATE PROGRAM

The department offers courses that (1) prepare students for work and advanced study in the biological and the biomedical sciences, (2) provide support for other programs within the university that require students to obtain a background in one or more subfields of biology, and (3) meet the needs of nonscience majors who wish to integrate the perspectives of the science of biology into a liberal arts curriculum. The major in biology is especially suitable for students who intend to go on to professional schools in the health sciences or graduate work in a variety of subfields of the biological sciences. Requirements for the biology major include:

- eight courses in biology, including Biology 101 and 102 (see below)
- two courses in chemistry (Chemistry 101 and 102)
- two courses in mathematics (Math 120 and 121)
- two courses in physics (Physics 101, and 111 or 112)
- two additional lecture/laboratory courses in chemistry (usually Chemistry 131 and 132), geology or physics
- nine courses outside the fields of biology, chemistry, geology, mathematics, or physics.

Science and mathematics courses offered to meet the major requirements may not be taken with a "pass" option.

Of the eight required biology courses, at least one must be completed in each of the following three areas:

- (1) cellular and molecular biology, examples include *Genetics* (Biology 118), *Cell Biology* (Biology 137), *Biochemistry* (Biology 271);

- (2) organismal biology, examples include *Microbiology* (Biology 109), *Botany* (Biology 110), *Invertebrate Zoology* (Biology 116), *Vertebrate Morphogenesis* (Biology 121), or *Physiology* (Biology 240); and
- (3) supraorganismal biology, examples include *Marine Biology* (Biology 114), *Ecology* (Biology 216), *Population Biology* (Biology 220). Please note that the two semester course *Introduction to Biology* (Biology 101 and 102) is a prerequisite for all other courses in biology that will be used to meet the requirements for a major.

Prospective majors are urged to consult with an adviser selected from the department's faculty. With careful guidance a student can maximize the benefits associated with the options available within the major. Included among these options are opportunities to participate in ongoing research in the honors program, specialized research courses, and internships.

NEUROSCIENCE CONCENTRATION

A biology major interested in a career in any of the physiological sciences, medicine or health care, may wish to concentrate in the interdisciplinary study of neuroscience. An undergraduate who wishes to focus on neuroscience can major in either biology or psychology with a concentration in neuroscience. Both major concentrations require similar coursework. Those interested in a psychology major should refer to the psychology section of this catalogue.

A neuroscience concentration with a major in biology must fulfill the requirements of the biology major and take the following courses:

- Neuroscience I and II* (Biology 160 and 161)
- four additional courses selected from a list of approved neuroscience course offerings (available in the department office)
- A capstone research project to be started no later than the second semester of the junior year. This project must be under the direction of a full-time neuroscience faculty member.

Students with a biology neuroscience concentration are strongly encouraged to take *Genetics*, *Cell Biology*, and *Animal Physiology*. Those with a neuroscience concentration are encouraged to take *Biochemistry*, computer science courses (e.g., *Computer Programming I*), and an appropriate philosophy course (e.g., *Biomedical Ethics*, *Philosophy of Science*, *Philosophy of Mind* or *Philosophy of Biology*). Concentrators are also encouraged to take humanities courses and to become proficient in a foreign language.

HONORS PROGRAM

Well-qualified upper division majors in biology are eligible for admission to a program that can lead to a bachelor of arts degree with honors in biology. A candidate for honors in biology must meet all requirements of the major, maintain a high grade point average, complete an independent research project under the supervision of a departmental faculty member, prepare an acceptable thesis, and pass a final comprehensive examination. The criteria for admission into the honors program are outlined in material available from the department.

GRADUATE PROGRAMS

The department offers coursework leading to the Master of Arts and Doctor of Philosophy degrees in Biology. Candidates for these degrees can emphasize Biochemical and Developmental Genetics, Cell Biology, Endocrinology, Environmental Microbiology, Marine Phycology, Molecular Genetics, Neurochemistry and Regulatory Biochemistry, Population Ecology and Population Genetics, Sensory Neurophysiology, or Symbiosis and Parasitism.

In addition, there are opportunities for interdepartmental work in biochemistry/molecular biology, the neurosciences, and environmental sciences.

It will be assumed that all students admitted to the department's graduate program(s) will be working toward the doctoral degree, but it may be appropriate that some students complete the master's program before beginning doctoral work. Students applying for admission to either program must demonstrate adequate preparation in the basic sciences, an overall undergraduate record of *B* or better, and satisfactory scores on the Graduate Record Examination. Tuition scholarships and research and teaching assistantships are available to qualified students. Further information can be obtained from the department chair.

MASTER OF ARTS

A candidate for the Master of Arts degree must complete three to four semesters of academic work, pass a qualifying examination before the end of the second semester in residence, acquire teaching and research experience, and defend an acceptable thesis. Specific requirements for individual students will be determined by the faculty advisers.

DOCTOR OF PHILOSOPHY

Qualified students may be admitted into the doctoral program. The minimal requirements for a candidate for the doctoral degree are determined by the University and can be found in the section of this catalogue describing the Graduate School. Additional requirements and the details of individual programs will be determined by the student's advisory committee.

COURSES RECOMMENDED FOR NONSCIENCE MAJORS

10 THE BIOLOGICAL WORLD/ Lecture (formerly 105)

An introductory course for those not majoring in biology. The course is a survey of biology emphasizing the relationships of various plants and animals to society. Our relation to current biological problems is discussed. Not for biology major credit. Biology 101, 102 *not* required.

Staff

Offered every year

11 GENETICS AND SOCIETY/ Lecture (formerly 126)

For the nonscience major, this basic course in genetics emphasizes methods of genetic analysis in humans and the role of genetics in modern society. Topics include genetic diseases, chromosomal abnormalities, genetic screening, statistical analyses for polygenic traits, and population genetics. Biology 101, 102 *not* required.

Mr. Lyerla

Offered every year

COURSES OFFERED FOR SCIENCE MAJORS AND OTHER QUALIFIED STUDENTS

101 INTRODUCTION TO BIOLOGY I/ Lecture, Laboratory (formerly 1001)

102 INTRODUCTION TO BIOLOGY II/ Lecture, Laboratory (formerly 1002)

A two-semester course designed with three goals in mind: (1) to provide students with an understanding of the unifying themes in modern biology, (2) to introduce students to the diversity of life forms at all levels of organization, and (3) to illustrate the methods and modes of scientific inquiry in the biological sciences. The emphasis is on organismic and supraorganismic biology during one semester and on cellular and molecular biology during the other semester. Both semesters must be completed for enrollment in advanced courses offered to satisfy the requirements of the biology major. Prior approval of the chair of the department must be obtained if a qualified student wishes this requirement to be waived.

Staff

Offered every year

103 BIOGEOGRAPHY/ Lecture

Past and present geographical distributions of plant and animal species are considered in relation to continental drift, species interactions, dispersal strategies, biological evolution, and human activity. Island biogeography and the biogeography of tropical vascular plants are emphasized. Prerequisites: Biology 101 and 102.

Mr. Herwitz

Offered every year

109 MICROBIOLOGY/ Lecture, Laboratory

An introduction to the fundamental principles and methods of microbiology and their application to the biomedical and environmental sciences. Emphasis is on the bacteria. One or more college-level courses in chemistry are advisable. Prerequisites: Biology 101 and 102.

Mr. Reynolds

Offered every year

110 BOTANY/ Lecture, Laboratory

Structure, development, and evolutionary relationships of plants are examined along with plant functions such as photosynthesis, communication, and transport. Aspects of the molecular biology of plants, plant ecology, genetics, hormones, and nutrition are discussed. The diversity of plants is reviewed, as well as their role in symbiosis and genetic engineering. Protists, fungi, and bacteria are considered in relation to plants. Prerequisites: Biology 101 and 102.

Mr. Ahmadjian

Offered every year

114 MARINE BIOLOGY/ Lecture, Field Trips (formerly 217)

An introduction to plant and animal life in the oceans from the point of view of diversity, ecology, and evolution. Included are the relationships of marine biology to the welfare of mankind. Prerequisites: Biology 101 and 102.

Mr. Johansen

Offered every year

115 FLOWERING PLANTS/ Lecture, Laboratory

An introduction to the identification, classification, evolution, and ecology of flowering plants. Ferns, fern-allies, and gymnosperms are considered. Includes short field trips to nearby areas to examine the spring flora. Prerequisites: Biology 101, 102, and permission of instructor.

Mr. Ahmadjian

Offered every other year

116 INVERTEBRATE ZOOLOGY/ Lecture, Laboratory (formerly 215)

A survey of 96 percent of all animal species, this course examines the major invertebrate groups from morphological, ecological, and evolutionary perspectives. Two lectures and one laboratory session per week. Prerequisites: Biology 101 and 102.

Mr. Livdahl

Offered every other year

118 GENETICS/ Lecture, Discussion

Course covers Mendelian genetics; the molecular nature and function of the gene; gene and chromosome mutation; genetic mapping in bacteriophages, bacteria, fungi, and higher organisms; and population genetics. Prior exposure to college-level chemistry is recommended. Prerequisites: Biology 101 and 102.

Ms. Comer

Offered every year

121 VERTEBRATE MORPHOGENESIS/ Lecture, Laboratory

Combines traditional *Vertebrate Embryology* and *Comparative Anatomy* courses into a single semester's study of the vertebrates. The evolutionary perspective is strongly emphasized, and the course consists primarily of anatomical analyses

of the vertebrate embryo and organ systems of the adult. Prerequisites: Biology 101 and 102.

Mr. Lyerla

Offered every year

135 THE PARADOX OF ANIMAL SOCIALITY/ Lecture, Discussion

Refer to course description under Psychology 135. Prerequisites: Biology 101 and 102.

Mr. Thompson

Offered every year

137 CELL BIOLOGY/ Lecture, Laboratory

The cell as a structural and functional unit is studied. Included are introductions to the physiochemical properties and metabolic roles of molecules and macromolecules of cellular origin, and discussion of the roles of the nucleus and cytoplasm and cell membranes in the regulation of cell metabolism. Prerequisites: Biology 101 and 102.

Mr. Curtis

Offered every year

160 NEUROSCIENCE I/ Lecture, Laboratory-Discussion

The first of a two-course introduction to invertebrate and vertebrate nervous systems. Basic anatomy, physiology and chemistry, and the function of sensory and motor systems are covered. Emphasis is on classical and current research and on neuroscience as a complex of research problems requiring integrated anatomical, electrophysiological, chemical, and behavioral approaches. Guest lecturers include neuroscientists from the Biology, Chemistry, Physics and Psychology Departments at Clark and from neighboring institutions. Prerequisites: Biology 101, 102 and Psychology 160.

Ms. Kennedy, Mr. Stein

Offered every year

161 NEUROSCIENCE II/ Lecture, Discussion

The second of a two-course introduction to nervous systems. Surveys current problems in neuroscience including theories of brain function. Emphasis is on the underlying physiological mechanisms that mediate behavior, i.e. motivation, emotion, learning, and memory. The course is constructed on a systems approach designed to demonstrate the complex and interdependent relationship of the body and brain to behavior. Prerequisite: Biology 160.

Ms. Kennedy, Mr. Stein

Offered every year

170 NUTRITION AND METABOLISM/ Lecture

Human health is studied from the perspective of the chemistry of biological regulatory processes. The basic components of food are presented, and their biological function of maintaining human growth and vitality is studied. The role of food additives and cultural variations in diet in regard to pathology is discussed. Prerequisites: Biology 101, 102, and Chemistry 101, 102.

Mr. Brink

Offered every year

183 LANGUAGE OF BIOLOGY/ Lecture

Concerned with the study of Latin and Greek roots and affixes that constitute biological terms in disciplines such as paleontology, taxonomy, and anatomy. The course also surveys the history of biology through its language: when certain concrete and abstract terms entered the language, who invented them, how their meaning may have changed, and possible alternate contemporary definitions. Prerequisites: Biology 101 and 102.

Mr. Blinderman

Offered periodically

195 PURSUIT OF INQUIRY/ Lecture, Discussion

Refer to course description under Psychology 195. Prerequisites: Biology 101 and 102.

Mr. Thompson

Offered every year

200 LABORATORY IN ETHOLOGY

Refer to course description under Psychology 200. Prerequisites: Biology 101 and 102.

Mr. Thompson

Offered periodically

204 WATERSHED ECOLOGY/ Lecture, Discussion (formerly 216)

Advanced seminar examining current scientific literature on the biogeochemistry of contrasting forested ecosystems. Topics include the inputs, outputs, and internal transfers of energy and nutrients in north temperate hardwood forests, tropical rainforests, cloud forests, eucalypt woodlands, and baldcypress swamps. The Hubbard Brook ecosystem study is considered in detail. Includes a field trip to the Hubbard Brook experimental watershed in the White Mountains. Prerequisites: Biology 101 and 102.

Mr. Herwitz, Mr. Livdahl

Offered every other year

211 SYMBIOSIS AND PARASITISM/ Lecture

Symbiotic and parasitic associations including animals, plants, protists, fungi, and bacteria are studied. The descriptive and functional aspects of each type of association are considered along with the experimental techniques that are used to study interrelationships between symbionts. Prerequisites: Biology 101 and 102.

Mr. Ahmadjian

Offered every other year

214 TOPICS IN PHYCOLOGY/ Seminar

Selected topics concerning algae from the structural, physiological, or ecological points of view are discussed. Prerequisite: Biology 110 or permission of instructor.

Mr. Johansen

Offered every other year

216 ECOLOGY/ Lecture (formerly 117)

Provides an overview of ecology as a scientific discipline. The primary emphasis is on efforts to explain and predict the distribution and abundance of organisms, how ecological communities are composed, and why they vary in time and space. Prerequisites: one or more courses from organismal biology group and one college-level math course.

Mr. Livdahl

Offered every year

219 RESEARCH IN BRAIN DAMAGE AND BEHAVIOR/ Laboratory, Discussion

Refer to course description under Psychology 219. Prerequisite: Biology 161.

Mr. Stein

Offered every semester

220 POPULATION BIOLOGY/ Lecture

Examines the properties that exist only at the population level, including schedules for birth and death, population growth patterns, spatial variation in abundance, genetic variation, and the factors that modify these features through time. Prerequisites: Biology 118, 216, or permission of instructor.

Mr. Livdahl

Offered every other year

221 DEVELOPMENTAL BIOLOGY/ Lecture, Laboratory

Considers the fundamentals of animal development with primary emphasis on

the vertebrate embryo. Prerequisite: Biology 121 or permission of instructor.
Mr. Lyerla Offered every other year

222 COMMUNITY ECOLOGY/ Seminar

Factors affecting the biological structure of natural communities are examined, with close attention to field experiments on competition and predation. Prerequisites: Biology 101, 102, and permission of instructor.
Mr. Livdahl Offered periodically

224 ENDOCRINOLOGY/ Lecture (formerly 124)

The chemistry and biological actions of hormones are discussed with emphasis on the mammalian endocrine system. Integration of studies of the ultrastructure and biochemistry of endocrine glands and their target tissues are a major focus of this course. Prerequisites: Biology 101 and 102.
Mr. Curtis Offered every year

225 ELECTRON MICROSCOPY/ Lecture, Laboratory

An introduction to the principles of electron optics, use of the electron microscope, preparation of specimens, and the techniques of electron microscopy applicable to biological investigation. Prerequisites: Biology 101, 102, and permission of instructor.
Mr. Curtis Offered every year

226 RESEARCH IN PERCEPTION/ Laboratory, Discussion

Refer to course description under Psychology 226. Prerequisites: Biology 101 and 102.
Ms. Wiser Offered every year

227 CELL CULTURE TECHNIQUES/ Lecture, Laboratory

An introduction to the methods used for propagation and experimental investigations of cells derived from multicellular organisms. Topics include maintenance and passaging of immortal and senescent cell lines, anchorage dependent and independent growth, media types and their preparation, differentiation, selection, hybridization, cloning, and chromosomal characterization of cell lines. Prerequisites: Biology 109 and either Biology 118 or 137; prior experience with aseptic techniques.
Mr. Lyerla Offered every year

228 MOLECULAR GENETICS/ Lecture, Seminar

Explores recent discoveries in the molecular genetics of prokaryotes and eukaryotes, with emphasis on new findings from recombinant DNA technology and DNA sequencing. Topics include protein synthesis, RNA transcription, gene regulation, repetitive DNA, gene cloning, split genes, gene families, transposable elements, oncogenes, and antibody gene rearrangement. Intended primarily for seniors and graduate students. Prerequisites: Biology 101, 102, and permission of instructor.
Staff Offered periodically

231 RECOMBINANT DNA/ Lecture, Laboratory

An introduction to gene cloning techniques. Students clone *Escherichia coli* DNA in a plasmid vector; specific experiments include DNA purification, restriction enzyme digestion, agarose gel electrophoresis, DNA ligation, bacterial transformation, genetic characterization of recombinants, restriction mapping, and DNA

sequencing. Two laboratory periods per week. Prerequisites: Biology 118 and Biology 109 or 271.

Ms. Comer

Offered every year

232 TOPICS IN MICROBIOLOGY AND PUBLIC HEALTH/ Lecture, Student Presentations, Discussion

Content varies.

For advanced undergraduate and graduate students who have completed a course in microbiology and one or more years of college-level chemistry. Prerequisites: Biology 109, Chemistry 102, and permission of the instructor.

Mr. Reynolds

Offered periodically

235 ENVIRONMENTAL HEALTH/ Lecture, Discussion

Principles and approaches used during the management of selected problems in environmental health: risk assessment, environmental toxicology, drinking water standards, waste treatment practices, and occupational health. Students do not have to be biology majors but must be juniors, seniors, or graduate students who can demonstrate literacy in one or more of the basic sciences and a relevant background. Prerequisite: permission of instructor.

Mr. Reynolds

Offered periodically

238 ISSUES IN PUBLIC HEALTH/ Lecture, Discussion

Introduction to the principles and methods of study design with emphasis on epidemiology, followed by selected case studies illustrating approaches and problems associated with the resolution of policy questions in public health areas. Students do not have to be biology majors but must be juniors, seniors, or graduate students who can demonstrate literacy in one or more of the basic sciences and a relevant background. Prerequisite: permission of instructor.

Mr. Reynolds

Offered periodically

240 PHYSIOLOGY/ Lecture, Laboratory

An introduction to the principles underlying physiological functions common to all living animals. Covers the subcellular, cellular, and organ levels of organization, and places a primary emphasis on the integrative processes whereby all of the diverse organs and systems are oriented to the performance of the complete organism. Prerequisites: Biology 137 and Chemistry 131.

Ms. Kennedy

Offered every year

241 RISK ASSESSMENT IN ENVIRONMENTAL TOXICOLOGY/ Lecture

Focus is on the assessment of hazardous properties of toxic chemicals in the environment and development of public health policy. The first part covers the principles of absorption, distribution, excretion, and toxic action of chemicals on humans; animal testing; and human epidemiology. The second part covers assessment of public health risks on the basis of animal and human test results, development of standards for air and water contaminants, and uncertainty in regulating hazardous chemicals. Prerequisites: Biology 101, 102, and permission of instructor.

Ms. Brown

Offered every year

246 VISION/ Seminar

An interdisciplinary study of vision covering topics such as current knowledge of the transduction of light to neural signals; spatial vision; the perception of color, motion, depth, and form; the development of the visual systems; and cognitive factors in vision. Topics are approached from the viewpoints of neurophysiology, psychophysics, neural modeling, machine vision, and cognitive psychology. The relationships between vision and the principles of neuroscience applicable to other sensory and perceptual systems are discussed. Prerequisites: Biology 161 or Psychology 140.

Ms. Kennedy, Mr. Stork, Ms. Wiser

Offered every other year

247 NEUROPHYSIOLOGY/ Seminar

Discussion of selected readings from classical and current research papers and books on principles and mechanisms of neuronal function. Emphasis is on understanding and critically evaluating research that has been done, understanding the significance of the work in a particular reading to the field as a whole, and recognizing appropriate directions for future research in each problem area. Prerequisites: Biology 161 or 240.

Ms. Kennedy

Offered every other year

260 DIRECTED RESEARCH/ Laboratory

An advanced independent study for undergraduates of an approved topic under the direction of a departmental member. Prerequisite: permission of instructor.

Staff

Offered every year

261 DIRECTED READINGS/ Discussion

Advanced readings on an approved topic will be under the direction of a departmental member. Prerequisite: permission of instructor.

Staff

Offered every year

262 HONORS IN BIOLOGY

Readings and research for students in the honors program. Credit/no record only.

Staff

Offered every year

271 BIOCHEMISTRY I/ Lecture, Laboratory

272 BIOCHEMISTRY II/ Lecture

This two-semester course provides a comprehensive and up-to-date survey of the field of biochemistry. The first semester covers cell metabolism and protein structure and function; the second semester deals with nucleic acid and protein metabolism and other topics. A laboratory component for the first semester acquaints students with methods and instrumentation used in biochemical research. Prerequisite: Biology 101, 102, and Chemistry 132.

Mr. Brink, Ms. Comer

Offered every year

Mr. Nelson, Mr. Thurlow

273 NEUROCHEMISTRY/ Lecture

Metabolic aspects of brain amines and biopolymers are considered in relation to neural function. Effects of drugs on memory processes are discussed in terms of biochemical mechanisms. Prerequisite: Biology 271.

Mr. Brink

Offered every other year

277 BIOCHEMISTRY OF DISEASE/ Lecture, Discussion

The course considers biochemical systems that are perturbed in metabolic regulatory processes as in cardiovascular disease, hormonal imbalance (diabetes), and genetic defects (Tay-Sachs disease). The effects of environmental influences represented by drug and nutrient components are also addressed. Prerequisites: Biology 101, 102, and Chemistry 131.

Mr. Brink

Offered periodically

280 BIOMETRY AND EXPERIMENTAL DESIGN/ Lecture

Provides a background in the basic methods of data analysis for biologists, applications of mathematics to the description of biological phenomena, and the generation of testable hypotheses from models of biological processes. Prerequisites: one or more biology courses beyond Biology 101 and 102.

Mr. Livdahl

Offered every year

294 FUNCTIONAL NEUROANATOMY/ Lecture

A systematic exploration of the organization of the brain and spinal cord and their functions. Topics include relationships of cortical and subcortical structures of the brain with the spinal cord and peripheral nerves, and the organization of higher brain circuits which form the anatomical bases of locomotion, vision, audition and higher nervous functions such as emotions, learning, and memory. Clinical examples bridge neuroanatomy with the neurological and neurosurgical disciplines. Prerequisites: Biology 160 and 161.

Staff

Offered every year

295 NEUROENDOCRINE MECHANISMS OF BEHAVIOR/ Lecture

A comprehensive examination of how neuroendocrine systems influence mammalian behavior. Initially, anatomical and physiological bases for interaction of the nervous and endocrine systems and the various classes of chemical signaling and major neuroendocrine pathways are reviewed. Neuroendocrine control of behaviors such as feeding, drinking, reproduction, and learning are then discussed with emphasis on how different classes of neuroendocrine signals individually and interactively influence specific behaviors. Application of new approaches to the study of the neuroendocrinology of behavior are included. Prerequisites: Biology 161 and 224.

Staff

Offered every year

300 READINGS AND RESEARCH IN BIOLOGY

Offered for variable credit.

Staff

Offered every year

310 SCIENTIFIC WRITING FOR GRADUATE STUDENTS/ Discussion

An introduction to the technique of writing scientific papers. The principal assignment is writing a journal article and a detailed analysis of the steps involved. Included are searching the scientific literature, handling quantitative data relevant to biological systems, and delivering an oral presentation on a scientific paper. Prerequisite: permission of instructor.

Mr. Ahmadjian

Offered every other year

315 LICHENOLOGY/ Seminar

A detailed, but broad, treatment of lichens with discussion of recent theories concerning their evolution and development. Symbiotic interactions, ecology, growth, nutrition and metabolism, water relations, chemistry, and genetics are considered. Includes several local field trips and laboratory sessions to deal with aspects of taxonomy and morphology. Prerequisite: permission of instructor.

Mr. Ahmadjian

Offered periodically

325 TOPICS IN CELL BIOLOGY/ Seminar

The fine structure and functions of subcellular organelles and macromolecules are discussed. Evidence for structure-function relationships obtained by a variety of physical and biochemical methods is considered, with particular emphasis on electron microscopic studies. Prerequisite: permission of instructor.

Mr. Curtis

Offered every other year

341 TOPICS IN ENDOCRINOLOGY/ Seminar

Discussion focussed on current literature on the chemistry and biological actions of hormones. Integration of studies of fine structure and biochemistry of endocrine glands and their target tissues is emphasized. Prerequisite: permission of instructor.

Mr. Curtis

Offered every other year

360 MASTER'S THESIS

Offered for variable credit.

Staff

Offered every year

390 DOCTORAL DISSERTATION

Offered for variable credit.

Staff

Offered every year

Business/Management

See Department of Management.

Chemistry

DEPARTMENT FACULTY

Alan A. Jones, Ph.D., *chair*: polymer, physical

Daeg S. Brenner, Ph.D.: nuclear

Karen L. Erickson, Ph.D.: organic, natural products

Frederick T. Greenaway, Ph.D.: bioinorganic, physical
 Donald J. Nelson, Ph.D.: biochemistry, bioinorganic
 David L. Thurlow, Ph.D.: molecular biology
 Edward N. Trachtenberg, Ph.D.: organic
 Mark M. Turnbull, Ph.D.: organic
 Wen-Yang Wen, Ph.D.: coal conversion, physical, catalysis

PART - TIME FACULTY

Paul T. Inglefield, Ph.D.

AFFILIATE FACULTY

Mauri A. Ditzler, Ph.D.
 David Kupfer, Ph.D.
 George E. Wright, Ph.D.

ADJUNCT FACULTY

John J. Brink, Ph.D.
 Christopher P. Landee, Ph.D.

EMERITUS

Harry C. Allen Jr., Ph.D.: inorganic, physical

UNDERGRADUATE PROGRAM

The Chemistry Department offers an undergraduate program with the following goals in mind:

- 1) to provide a variety of course offerings that are consistent with the accreditation requirements of the American Chemical Society;
- 2) to offer a program that will prepare students for graduate work in chemistry and related fields;
- 3) to provide a strong scientific background for students planning careers in health-related professions;
- 4) to encourage students not majoring in science to obtain an overview of the impact of science on society.

The requirements for the chemistry major are two courses in calculus (Math 120 and 121, or 124 and 125), two courses in physics (Physics 110, and 111 or preferably 112), and eleven courses in chemistry and related fields. These courses must include:

Course	Number
<i>Introductory Chemistry I</i>	101
<i>Introductory Chemistry II</i>	102
<i>Organic Chemistry I</i>	131
<i>Organic Chemistry II</i>	132
<i>Environmental Chemistry</i>	142
or <i>Bioanalytical Chemistry</i>	144
<i>Instrumental Analysis</i>	146
<i>Inorganic Chemistry</i>	150
<i>Physical Chemistry I</i>	160
<i>Physical Chemistry II</i>	162
or <i>Biophysical Chemistry</i>	164

The remaining two-course requirement is normally satisfied by advanced chemistry courses, one of which may be Chemistry 299.5, *Special Projects*, or Chemistry 299.8, *Honors*. On occasion, with permission from the department, the student may substitute an advanced-level course in biochemistry, computer science, mathematics, physics, or biology. In addition, at least six courses in a major's program must be taken from courses outside the fields of biology;

biochemistry; computer science; chemistry; geology; mathematics; physics; environment, technology and society; and environmental affairs.

Students planning graduate study in chemistry are strongly urged to take Physics 112 rather than Physics 111. In addition to the stated requirements, it is recommended that students take Chemistry 200, 231, and/or advanced mathematics, physics, and biochemistry courses, depending on the area of interest. Computer courses are also recommended. All chemistry majors are encouraged to undertake independent research projects either as a candidate for honors (Chemistry 299.8) or in a special projects course (Chemistry 299.5) and may do so after completing Chemistry 132.

A student may elect as his/her first course in chemistry: Chemistry 10, 90, 101, 102, or 131. Science majors normally start with Chemistry 101. The decision to start with Chemistry 102 or 131 (accelerating options) must be made in consultation with the department chair and may require taking a placement examination offered at the beginning of the academic year.

Students who fulfill the normal requirements will have their degree accredited by the American Chemical Society.

The department publishes an undergraduate handbook, *Chemistry at Clark*, which provides additional information. Copies are available at the departmental office.

HONORS PROGRAM

An honors degree program is offered for highly qualified majors. Students who want to enter this program must make a written application to the department chair prior to the beginning of their senior year. Participants are required to engage in an independent research project, participate in the departmental seminar program, and pass a set of comprehensive examinations. Further information about the program can be obtained from the department chair or the undergraduate handbook.

GRADUATE PROGRAM

The department offers programs leading to the degrees of master of arts and doctor of philosophy with specialization in various fields of chemistry. Emphasis is placed on tailoring programs to fit the specific needs and desires of the graduate student. To facilitate this goal, a committee of interested faculty works with each student to advise and review his/her progress in research work and, together with the student, defines the formal course work requirements. In the case of master's degree candidates, the requirements are essentially those of the University as stated elsewhere in the catalogue. Up to one year's equivalent of teaching apprenticeship will be required of all candidates for advanced degrees.

In addition to formal course work, the student must pass qualifying and preliminary examinations, and the department language requirement must be met. For further details, students should consult the appropriate departmental publications.

Graduate scholarships, teaching assistantships, and research fellowships are available. Further information on these awards may be obtained from the department chair.

COURSES

10 TOPICS IN CONTEMPORARY CHEMISTRY/ Lecture

This relatively nonmathematical course is designed for students majoring in social science or the humanities and is intended to develop a qualitative feeling about chemistry as it relates to the modern world. Approximately half of the

course is concerned with the development of modern chemical concepts; the remainder deals with current societal problems such as nuclear weapons and reactors, air and water quality, drugs, food additives, polymers, poisons, and others. In-class and final exams.

Staff

Offered every year

90 HISTORY OF SCIENCE/ Lecture

Traces the development of scientific thought, concepts, and methods from the Classical world (Egyptian, Greek, Roman), through the Middle Ages and the European Renaissance to the modern world. Historical milestones leading to the development of the "scientific method" are discussed in detail. The course concludes with an examination of the impact of chemical technology on modern society. In-class and final exams.

Mr. Nelson

Offered every year

101 INTRODUCTORY CHEMISTRY I/ Lectures, Laboratory

Designed to meet the needs of science majors and the pre-med program as well as those seeking a rigorous introduction to chemistry as part of their liberal arts education. Introduces fundamental chemical concepts and applies them to a discussion of structure, bonding, and reactivity of molecules. A knowledge of high school algebra is necessary; high school chemistry and physics, although helpful, are not required. The laboratory teaches techniques of chemical experimentation and methods of chemical analysis. In-class and final exams, laboratory reports, and quizzes.

Staff

Offered every semester

102 INTRODUCTORY CHEMISTRY II/ Lecture, Laboratory

Continues Chemistry 101 with a discussion of thermodynamics, equilibrium theory, kinetics, electrochemistry, and the application of such theories to studies of structure and reactivity of molecules. The laboratory studies experimental techniques related to the lecture material. Prerequisite: Chemistry 101 or advanced placement. In-class and final exams, laboratory reports, and quizzes.

Staff

Offered every semester

131 ORGANIC CHEMISTRY I/ Lecture, Laboratory

Discusses the chemistry of carbon and its compounds. The structures and reactions of related classes of organic molecules are systematically studied with emphasis on reaction mechanisms and structural factors that affect reactivity. The laboratory concentrates on the preparation and physical, spectral, and chemical properties of these classes of compounds. Prerequisite: Chemistry 102 or advanced placement. In-class and final exams, laboratory reports.

Staff

Offered every semester

132 ORGANIC CHEMISTRY II/ Lecture, Laboratory

Continues Chemistry 131 by studying more complex molecules and reaction mechanisms. Prerequisite: Chemistry 131. In-class and final exams, laboratory reports.

Staff

Offered every semester

142 ENVIRONMENTAL CHEMISTRY/ Lecture, Laboratory

Focuses on chemistry related to environmental problems, with emphasis on aquatic chemistry and aquatic pollution. Equilibrium theory is developed as a model for aquatic chemistry, and chemical analyses of local aquatic systems are

conducted in the laboratory according to Environmental Protection Agency procedures. Prerequisite: Chemistry 102. In-class and final exams, laboratory reports. Mr. Greenaway Offered every year

144 BIOANALYTICAL CHEMISTRY/ Lecture, Laboratory

This laboratory-oriented course presents both theoretical and practical aspects of quantitative analysis in biological systems. Topics include chromatography, electrophoresis, immunochemistry, ultracentrifugation, absorption and fluorescence, enzyme analyses, and radioactivity counting procedures. Prerequisite: Chemistry 132. In-class and final exams, laboratory reports.

Mr. Nelson

Offered every other year

146 INSTRUMENTAL ANALYSIS/ Lecture, Laboratory

Concentrates on instrumental techniques of analytical chemistry from both theoretical and practical points of view. Topics include electrochemistry, various types of spectroscopic analysis, chromatography, and electrophoresis. In the laboratory, these techniques are used in the analysis of chemical samples. Prerequisite: Chemistry 142 or 144. In-class and final exams, laboratory reports.

Staff

Offered every year

150 INORGANIC CHEMISTRY/ Lecture, Laboratory

Deals with theories of structure and bonding and their utility in explaining the chemistry of inorganic substances. Topics include molecular orbital, valence bond, and crystal field theories of bonding and examples of the use of these theories in explaining the structures and reactivities of inorganic molecules; acid-base theory; spectroscopic methods; and kinetics. Emphasis is placed on the interpretation of structure and reactivity in terms of basic molecular and atomic parameters. Prerequisite: Chemistry 142 or 144. Prerequisite or corequisite: Chemistry 132. In-class and final exams, laboratory reports.

Mr. Greenaway

Offered every year

160 PHYSICAL CHEMISTRY I/ Lecture, Laboratory

Covers the principles of physical chemistry as applied to gases, liquids, solids, and solutions. Much of the course is an introduction to the topic of chemical thermodynamics. The laboratory includes experiments in physical chemistry, the development of techniques of measurement, and technical report writing. Prerequisites: Mathematics 120 and Chemistry 102. Prerequisite or corequisite: Chemistry 132 and either Physics 112 or a strong high school background in physics. In-class and final exams, laboratory reports.

Mr. Wen

Offered every year

162 PHYSICAL CHEMISTRY II/ Lecture, Laboratory

The topics covered in this continued discussion of physical chemistry are solutions of the Schrodinger equation for simple systems, atomic and molecular spectroscopy, magnetic resonance, solid state and X-ray diffraction, statistical thermodynamics, and chemical kinetics. In-class and final exams, laboratory reports.

Prerequisite: Chemistry 160.

Mr. Wen

Offered every year

164 BIOPHYSICAL CHEMISTRY/ Lecture, Laboratory

Refer to course description under Biochemistry 164.

Mr. Nelson

Offered every other year

200 PHYSICAL CHEMISTRY III/ Lecture

Essentially an introduction to quantum mechanics. Covers elementary quantum-mechanical treatments of the structures of atoms and molecules. Prerequisite: Chemistry 162 or 164.

Staff

Offered every other year

210 PHYSICAL CHEMISTRY IV/ Lecture

Deals with the application of group theory to problems of chemical interest such as molecular vibrations, hybrid orbitals, and molecular orbital theory. Prerequisite: Chemistry 200 or permission of instructor.

Staff

Offered every other year

220 POLYMER SCIENCE/ Lecture

The physical chemistry of synthetic polymers will be presented including discussion of kinetic mechanisms of polymerization, molecular weight distributions, unperturbed dimensions, structure and conformation, viscosity, and dynamic properties. Specific experimental methods useful in polymer chemistry such as osmotic pressure, light scattering, gel permeation chromatography, viscoelastic response, nuclear magnetic resonance, and dielectric response also will be reviewed. Prerequisite: Chemistry 162 or 164.

Mr. Jones

Offered every other year

230 PHYSICAL ORGANIC CHEMISTRY/ Lecture

This is a lecture course on the fundamentals of organic chemistry including molecular structure, acidity and basicity, kinetics, and mechanisms with emphasis on the most recent advances in organic chemical theory. Prerequisite: Chemistry 132, 160, or permission of the instructor.

Mr. Trachtenberg

Offered every other year

231 ADVANCED ORGANIC CHEMISTRY/ Lecture

Provides a framework for students who wish to pursue an interest in organic chemistry beyond the normal two-semester sequence. Many important topics in modern organic chemistry which cannot be covered in depth in the first two semesters are studied. These topics include rearrangements and neighboring group effects, nonclassical ions, concerted reaction mechanisms, chemistry of important biological molecules including steroids, terpenes, and various cofactors. Important spectroscopic methods also are discussed. These include advanced topics in proton magnetic resonance, carbon-13 magnetic resonance, and mass spectroscopy. Prerequisite: Chemistry 132.

Staff

Offered every other year

232 ADVANCED ORGANIC CHEMISTRY/ Lecture, Laboratory

This course is the same as Chemistry 231 except that there is an additional four-hour lab each week where experiments related to the lecture material are performed. Offered for 1-1/2 credits.

Staff

Offered every other year

233 ORGANIC CHEMISTRY OF BIOMOLECULES/ Lecture

Emphasizes the synthesis, proof of structures, reactions, and reaction mechanisms of important classes of molecules playing significant biological roles. Topics include the carbohydrates, fats, proteins, and cyclic ureides, including the pyrimidines and purines of importance in drugs and nucleic acids. A selection of other molecules from the steroids, alkaloids, and terpenoids also are discussed briefly. Prerequisite: Chemistry 132.

Mr. Trachtenberg

Offered every other year

235 NATURAL PRODUCTS/ Lecture, Optional Laboratory

The structure, synthesis, and chemistry of selected secondary metabolites including steroids, terpenoids, alkaloids, and actogenins of both terrestrial and marine origin are discussed. Biogenetic theory is used extensively to emphasize the simplicity within the complexity of these natural products. An optional four-hour laboratory per week is also available. Prerequisite: Chemistry 132.

Ms. Erickson

Offered every other year

242 NUCLEAR SCIENCE/ Lecture, Laboratory

This course covers the fundamentals of nuclear chemistry and physics: production, isolation, identification, and measurement of radioactive atoms. Prerequisite: permission of instructor.

Mr. Brenner

Offered periodically

250 ADVANCED INORGANIC CHEMISTRY/ Lecture

Extends the concepts discussed in Chemistry 150 and places them on a more quantitative theoretical basis. Prerequisites: Chemistry 150 and 162 or permission of instructor.

Mr. Greenaway

Offered periodically

262 ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY/ Lecture

This course is designed as an introduction to the theory and application of EPR as a probe of structure and reactivity. Theoretical concepts are discussed in a manner that does not require a knowledge of quantum mechanics, though a basic knowledge of chemistry is required. The course is designed to be suitable also for biology and physics majors. Prerequisite: permission of the instructor.

Mr. Greenaway

Offered periodically

271 BIOCHEMISTRY I/ Lecture, Laboratory

272 BIOCHEMISTRY II/ Lecture

Refer to course descriptions for Biochemistry 271 and 272.

Staff

Offered every year

275 PROTEIN CHEMISTRY/ Lecture

Refer to course description for Biochemistry 275.

Mr. Nelson

Offered every other year

276 STRUCTURE AND FUNCTION OF NUCLEIC ACIDS/ Lecture

This course discusses principles of nucleic acid structure including: types of helices, primary structure, secondary structure, and supercoiling. In the second half of the course, students will discuss papers relating the principles of structure to a particular function such as storage, expression of information, catalysis, and evolution of the genetic code. Prerequisite: Chemistry 272.

Mr. Thurlow

Offered every other year

278 PRINCIPLES OF PHARMACOLOGY/ Lecture

Refer to course description for Biology 278.

Staff

Offered every other year

290 SPECTROSCOPY/ Lecture

This course deals with the application of the most widely used forms of spectroscopy in the laboratory. Topics include NMR, EPR, IR, UV, visible, Raman, fluorescence, and photoelectron spectroscopy, mass spectrometry, and other techniques, as time permits. Emphasis will be placed on giving the student the

practical knowledge necessary to operate spectroscopic instrumentation. Prerequisite: Chemistry 162 or 164.

Staff

Offered every other year

299.5 SPECIAL PROJECTS/ Laboratory, Discussion

Individual investigations which involve laboratory and/or literature research.

Offered for variable credit. Prerequisite: permission of instructor.

Staff

Offered every semester

299.8 HONORS COURSE/ Laboratory, Discussion

Primarily for majors seeking departmental honors in chemistry. Involves a laboratory research project and participation in departmental seminars.

Offered for variable credit. Prerequisite: permission of department chair.

Staff

Offered every semester

300 RESEARCH/ Laboratory

Offered for variable credit.

Staff

Offered every semester

322 THERMODYNAMICS/ Lecture

Discusses applications of the three laws of thermodynamics to chemical systems.

Mr. Wen

Offered periodically

323 STATISTICAL MECHANICS/ Lecture

Treats statistical mechanics as a bridge between molecular properties and thermodynamic functions, as applied to chemical systems.

Mr. Wen

Offered every other year

333 SYNTHETIC ORGANIC CHEMISTRY/ Lecture

The synthesis of organic compounds is discussed. Topics include the scope and limitations of general methods, mechanistic aspects, and stereochemistry. Special emphasis is on the total synthesis of natural products from design of methods to execution. Three lectures per week. Prerequisite: Chemistry 132.

Ms. Erickson

Offered periodically

350 SEMINAR

Consists of reports on research and discussions of recently published work. Not offered for credit.

Guest Lecturers, Staff, Graduate Students.

361 MOLECULAR STRUCTURE/ Lecture

This course concerns physical methods relevant to the determination of molecular structure and the characterization of molecular motion. Several methods will be discussed, although the emphasis will be on magnetic resonance.

Mr. Jones

Offered every other year

379 SPECIAL TOPICS/ Seminar

Consists of research and literature reports by graduate students and undergraduate honors candidates.

Staff

Offered every semester

380 RESEARCH CONFERENCE/ Seminar

Consists of informal reports of research work being done in the laboratory. Not offered for credit.

Staff, Graduate Students

Offered every semester

Classics

PARTICIPATING FACULTY

Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, Classical mythology, Classical art and archaeology, ancient history

Classics includes courses in the Classical Greek and Latin languages and, in English, the culture and history of the Greek- and Latin-speaking peoples of the ancient Mediterranean. Classics courses are recommended to students as part of their general education and to majors in comparative literature, English, foreign languages and literatures, fine arts, history, music, and philosophy. Although there is no departmental major in classics, students interested in pursuing the study of the ancient Greco-Roman and Judaeo-Christian roots of Western civilization are directed to the interdisciplinary and interdepartmental Program in Ancient Civilization.

COURSES

A. GREEK

101/102 INTRODUCTORY GREEK/ *Lecture, Discussion*

A beginner's course in the language of Classical Greece. The course covers the grammar and syntax of the ancient Greek language with the goal of enabling students to read, in the second semester, selections from ancient Greek texts. Course readings, in Greek, may include philosophical works such as Plato's *Apology of Socrates* and *Crito*, or selections from Homer, Herodotus, and the New Testament, depending on class interests. Indivisible course.

Mr. Burke

Offered every other year

103/104 INTERMEDIATE GREEK/ *Lecture, Discussion*

A reading course in Classical Greek literature. The course begins with a rapid review of Greek grammar but consists largely of reading and discussion of an appropriate Greek literary text. Course content varies depending on student interest but typically consists of a Greek tragedy such as Sophocles' *Oedipus the King* or selections from Homer's *Iliad* or *Odyssey*. Prerequisite: Greek 101/102 or equivalent background in the language. Available as a directed reading by arrangement with the instructor.

Mr. Burke

Offered every year

B. LATIN

101/102 INTRODUCTORY LATIN/ *Lecture, Discussion*

A beginner's course in the Latin language including, in the first semester, an introduction to the grammar and syntax of Latin with appropriate attention to Latin's role as parent to the Romance languages and source of much of the vocabulary of modern English. The second semester will be primarily devoted to reading selections from suitable Latin texts such as the lyric poetry of Catullus or Horace, the historical works of Julius Caesar or Livy, the Vulgate Bible, or selected medieval texts. Indivisible course.

Mr. Burke

Offered every other year

103/104 INTERMEDIATE LATIN/ Lecture, Discussion

A reading course in the Latin language. The course begins with a rapid review of Latin grammar but consists primarily of reading and discussion of appropriate Latin texts. Course content will vary depending on class interest but could include, for example, selections from Vergil's *Aeneid*, Ovid's *Metamorphoses*, Latin historical works or selections from the Latin church fathers. Prerequisite: Latin 101/102 or equivalent background in the language. Available as a directed reading by arrangement with the instructor.

Mr. Burke

Offered every year

C. CLASSICS COURSES TAUGHT IN ENGLISH

110 ANCIENT GREEK ART AND ARCHITECTURE

Refer to course description under Art History.

Mr. Townsend

Offered every other year

111 ROMAN ART AND ARCHITECTURE/ Lecture, Discussion

A survey of the artistic and architectural accomplishments of ancient Rome and of the many peoples who made up the Roman Empire, beginning with the origins of Rome in Bronze Age central Italy. The course treats Roman relations with Etruscans, Greeks, and other non-Latin-speaking peoples as these interactions manifest themselves in Roman art and architecture. The course will conclude with an examination of the effect of Judaeo-Christian values on the formerly pagan Empire, the appearance of a Christian Roman government, and the development of distinctively Christian forms of Roman art and architecture. One mid-term, one term paper, final examination.

Mr. Burke

Offered every other year

121 INTRODUCTION TO GREEK CULTURE, ART, AND ARCHEOLOGY/ Lecture, Discussion

A general introductory survey of ancient Greek culture and history covering: the Bronze Age civilizations of Crete and Mycenae, the classical Greek city-states, the conquests of Alexander, and the emergence of international urban culture in the Mediterranean world. Readings in the works of ancient authors will be chosen to demonstrate cultural and intellectual life, political developments, social and family structure, and religion. Many lectures, such as those on art, architecture, and archeology, will be illustrated by slides. One mid-term, one term paper, final examination.

Mr. Burke

Offered every other year

124 INTRODUCTION TO CLASSICAL MYTHOLOGY/ Lecture, Discussion

A study of ancient Near Eastern, Greek, and Roman literary texts (along with some modern ones), which are particularly useful for gaining an understanding of the function of myth in Greco-Roman antiquity as a vehicle for artistic communication and social commentary. The archeological and anthropological background of the ancient world are sketched in, and the religious and philosophical implications of myth are discussed. The course pays particular attention to the influence of ancient mythology on later European culture, especially literature and art. Various modern approaches to myth analysis (structural, psychoanalytical, and literary) are touched upon. Many of the lectures are illustrated by slides. One mid-term, one term paper, final examination.

Mr. Burke

Offered every other year

135 CLASSICAL GREEK TRAGEDY/ Lecture, Discussion

A survey of tragic drama in Classical Greece. The course treats the distinctive role of drama in ancient Greek society, staging and production of Classical tragedy, and problems of interpreting the texts of plays (in translation) by Aeschylus, Sophocles, and Euripides. The course also pays appropriate attention to mythology as the primary subject of Greek tragedy. One mid-term, one term paper, final examination.

Mr. Burke

Offered every other year

157 THE AGE OF NERO/ Lecture, Discussion

A close study of the first century of Roman Imperial society with particular attention to the reign of the emperor Nero (A.D. 54-68). The course emphasizes the historical and social results of the consolidation, during the first century A.D., of totalitarian rule in Rome, a form of government which would dominate the Mediterranean world and most of Europe for four centuries. The age of Nero was also a period of almost unprecedented creativity in the arts; therefore, students will also learn, through the study of Neronian art, architecture and literature, about the development of a distinctive Imperial idiom in these fields.

Mr. Burke

Offered every other year

174 THEMES IN CLASSICAL GEOGRAPHIC THOUGHT

Refer to course description under Geography.

Mr. Koelsch

Offered every other year

250 NARRATIVE IN ANCIENT HISTORICAL WRITING/ Seminar, Discussion

A survey of ancient modes of writing and interpreting history. By reading selected works of ancient authors in translation, students examine: narrative and stylistic technique, rhetoric, character portrayal, propaganda and reliability, the manipulation of events for artistic purposes, the effect of the author's intent on his work, and the presence or intrusion of the author's personality. Requires reading, in translation, of selections from Herodotus' *History*, Thucydides' *History of the War between Athens and Sparta*, Plutarch's *Lives*, Josephus' *History of the Jewish War*, and Tacitus' *Annals and Histories*. Reference will also be made to Old and New Testament ideas of patterns and purpose in history and to poetic treatments of history by authors such as Homer and Vergil. One mid-term, one term paper, final examination.

Mr. Burke

Offered every other year

262 JEWS AND CHRISTIANS IN THE ANCIENT WORLD/ Lecture, Discussion

A historical and cultural survey of the complex and tumultuous period between the foundation of the Roman Empire and the sixth century A.D., when medieval culture was established in Europe. Two themes dominate the course: (1) the struggle between pagan or classical modes of thought and Judaeo-Christian beliefs and values, and the assimilation of each in the other; (2) the tension within the Christian movement between spiritual and practical concerns as the new religion came to dominate Western culture. The interaction of Greco-Roman, Jewish, and Christian cultures is approached by reading ancient authors in translation, by studying appropriate secondary sources, and by examining representative samples of the visual arts of the period in lectures illustrated by slides. One mid-term, one term paper, final examination.

Mr. Burke

Offered every other year

Communications

PRINCIPAL ADVISERS

Maren E. Stange, Ph.D., *program coordinator*, Assistant Professor of Communications

Charles S. Blinderman, Ph.D., Professor of English

Marvin A. D'Lugo, Ph.D., Associate Professor of Spanish, Adjunct in Screen Studies

Philip Rosen, Ph.D., Assistant Professor of Screen Studies

Communications studies at Clark is carefully integrated with our liberal arts curriculum. Students interested in exploring any aspect of the communications field can select from more than fifty courses, taught by an interdisciplinary faculty. A current list of courses can be obtained from the principal advisers.

The communications concentration is designed to assist students in structuring individual programs appropriate to their needs and interests. A list of sample programs is available from the principal advisers. This list has been developed to help the student select a program that best supplements his/her major. For example, a student interested in a journalism career may choose to major in English and concentrate in communications with an emphasis upon visual studies. A student interested in becoming a screenwriter could major in screen studies and concentrate in communications with a focus on writing. A student preparing for graduate study may concentrate in screen while majoring in French, German, or Spanish, thus combining literature, film/video, and criticism. Rather than narrow specialization in a technical field, the Clark communications concentration seeks to nurture an understanding of the general principles of communication and fundamental skills in visual and verbal thinking.

Each student is expected to register for an internship in an agency or organization directly related to the field of communications such as a newspaper, radio, or television station, graphic design firm, advertising agency, theater company, museum, gallery, public relations firm, charitable or educational foundation, etc. In some cases the student may choose an on-campus internship (such as working in the Clark Communications Office, Little Center Gallery, Clark Center for Contemporary Performance; assisting a professor or staff member in research, writing, or teaching; or participating in Clark's Teaching Apprentice Program, which is open to students from all major fields).

To concentrate in communications, students must complete the following:

1. A major in any of the disciplines (English, foreign languages and literatures, and visual and performing arts are the most common.)
2. Two required courses: *Principles of Communications* and an *Internship*
3. Four additional courses selected in consultation with one of the principal advisers.

REQUIRED COURSES

190 PRINCIPLES OF COMMUNICATIONS/ Lecture, Discussion

An introduction to the communications concentration, which provides an elementary but comprehensive survey that may be pursued in greater depth in subsequent courses. Students explore both the theory and practice of communication in all of its major aspects: visual communications, oral and written language, and performance.

Ms. Stange

Offered every year

192 ETYMOLOGY/ Lecture, Discussion

Refer to course description under the English Department's Language and Communications section.

Mr. Blinderman

Offered periodically

193 THE LANGUAGE OF BIOLOGY/ Lecture, Discussion

Refer to course description under the English Department's Language and Communications section.

Mr. Blinderman

Offered periodically

294 HISTORY OF THE ENGLISH LANGUAGE/ Lecture, Discussion

Refer to course description under the English Department's Language and Communications sections.

Ms. Gertz

Offered every other year

299.9 INTERNSHIP

Staff

Comparative Literature

PARTICIPATING FACULTY

Michael K. Spingler, Ph.D., *program director*: French theater and film, comparative drama, translation

Maria I. Acosta-Cruz, Ph.D.: Baroque literatures; post-modernist narrative

Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, classical mythology, classical art and archaeology

Marvin A. D'Lugo, Ph.D.: Hispanic literature and film, narrative theory

William Ferguson, Ph.D.: Spanish Golden Age literature, twentieth-century Hispanic literature, Spanish literature

Kenneth Hughes, Ph.D.: German and Russian language, nineteenth- and twentieth-century German and Russian literature, comparative literature

Hartmut Kaiser, Ph.D.: German language and literature, German romanticism, the fairy tale, relations between music and literature

Dorothy Kaufmann, Ph.D.: French feminism, Sartre and existentialism, European novel

Gale H. Nigrosh, Ph.D.: sociolinguistics, the theory and practice of foreign language teaching, the development of written discourse

Walter Schatzberg, Ph.D.: age of Goethe, German expressionism in literature and the arts, German cinema, relations of literature and science

ADJUNCT FACULTY

Martyn J. Bowden, Ph.D.

John Conron, Ph.D.

Bernard Kaplan, Ph.D.

Philip Rosen, Ph.D.

UNDERGRADUATE PROGRAM

The Major in Comparative Literature: Program Description

Comparative Literature offers the student a program of studies in the formation and development of the Western mind as it is expressed through poetry, prose, drama, film, and related arts. Offered by the Department of Foreign Languages and Literatures, the program is by nature interdisciplinary and has strong ties with several other departments in the University. In addition to the core of courses offered by the department in comparative literature and literatures

in foreign languages (French, German, Hebrew, Russian, and Spanish), the student is encouraged to take courses in English, humanistic geography, psychology, and visual and performing arts. One of the particular aspects of the program is a working approach to the text combined with a critical approach. This may take the form of play production; seminars in the translation of lyric poetry and drama; and supervised work in the contemporary theory of the relationship between text, performance, and spectator positioning response.

The curriculum in comparative literature has five components:

1. *Foundation courses*: These courses, which are primarily part of the college's Program of Liberal Studies, focus on the traditions and sources of our culture. Foundation courses stress the relationship between the literature of the modern period and that of the classical, medieval, and Renaissance periods.
2. *Courses in cultural narrative*: These are courses in literature, film, drama, and related arts, including courses given in the foreign language of a given country. The general concern of these courses is a study of the ways in which literature, film, and drama shape our perception of ourselves and the culture in which we live. Of particular importance in this group are courses in the aesthetics, criticism, and theory of narrative, film, and drama as well as courses exploring the relationship between literature and philosophy, literature and politics, literature and psychology, and literature and fine arts.
3. *Cluster courses in advanced topics*: These are courses normally offered to juniors and seniors. In most cases they are interdisciplinary clusters offered by faculty within the Department of Foreign Languages. Examples of possible cluster themes are: "American Space and its European Roots;" "Centers of Creativity (Berlin, Madrid, Paris, and Vienna);" and "The European Imagination Between the Wars: Dada, Expressionism, and Surrealism." Cluster themes vary from year to year. We expect that these courses will lead to the definition of capstone projects for the major.
4. *Capstone Projects*: Advanced work done independently by individual students with the supervision and approval of comparative literature faculty. A capstone project could include a senior thesis, a translation of a literary work, or work in foreign language play production.
5. *The Comparative Literature Colloquium*: The colloquium serves as the center within which students and faculty of the Comparative Literature Program meet to discuss the progress of capstone projects and the development of themes for future cluster courses. It is primarily a place for the sharing of ideas and perspectives that may originally have developed within the context of a particular discipline or research topic. The colloquium frequently invites guests from outside the University, as well as from other Clark departments, to make presentations and lead discussions.

PROGRAM REQUIREMENTS

See Comparative Literature major requirements under Foreign Languages and Literatures.

COURSES

110 PROBLEMS IN COMPARATIVE LITERATURE/ Lecture, Discussion

An introductory course in comparative studies of literature from a problem-oriented perspective. The course revolves around five major issues:

- 1) The Tragic View
- 2) The Challenge of Faith
- 3) Man the Measure
- 4) The Search for Identity
- 5) The Aesthetics of Ambiguity

Readings include selections from Sophocles, Job, Pico, Pascal, Pope, Nietzsche, Mann, Hofmannsthal, Rilke, Hesse, Kafka, Joyce, Bernanos, Beckett, and Cortazar. Recommended for freshmen and sophomores.

Mr. Schatzberg, Mr. D'Lugo

Offered every other year

120 THE EPIC JOURNEY/ Lecture, Discussion

A comparative and cross-cultural examination of the epic as a recurring literary form. Special attention is paid to the various forms and functions of the hero's journey. Epic journeys may or may not have goals that are clear to the hero; they may be wanderings in unknown parts of the physical world, or they may be representative of various types of spiritual striving and trial. Our task is to define and articulate the various types of epic voyage and to relate their differences and similarities to the values of the societies which gave rise to them. Included in the term's reading are selections (in English translation) from Homer's *Odyssey*, Vergil's *Aeneid*, Apollonius's *Argonautica* and Apuleius's *Ass*.

Mr. Burke

Offered every other year

121 SURVEY OF INTERNATIONAL FILM MOVEMENTS

Refer to course description under Screen Studies 121.

Mr. Rosen

140 CITIES AND CULTURE

Refer to course description under Geography 140.

Mr. Bowden

150 NEW GERMAN CINEMA

Refer to course description under German 150.

Mr. Schatzberg

155 STUDIES IN ITALIAN FILM: NEOREALISM/ Lecture, Discussion

Explores the political, cultural, and aesthetic role of Neorealist cinema in Italy. The linkage between film, history, and nationality during the years 1942-1951 directs us to broader questions concerning the relations between art and politics in fascist, *Resistenza*, and contemporary Italian culture. In addition to film texts and selections from the controversial critical debate over Neorealism in film and cultural history, we consider both precursors and inheritors of Neorealist cinema.

Ms. Butzel

Offered every other year

160 FRENCH AND SPANISH CULTURE SEEN THROUGH CINEMA/ Lecture, Discussion

The cinematic medium has been considered both as a reflector of cultural values and as a formulator of them. This seminar explores the ways in which film culture has evolved in France, Spain, and Spanish America and the means through which a critique of social customs and values has been formulated. Screenings compare the similarities and differences of approach by various French and Spanish language film makers over the last half century. Emphasis is given to the political implications of cinema. Attendance at ten screenings of exemplary French and Spanish films is required.

Mr. D'Lugo, Mr. Spangler

Offered every other year

169 PSYCHOLOGY OF LOVE AND HATE IN LIFE AND LITERATURE

Refer to course description under Psychology 237.

Mr. Kaplan

175 LITERATURE AND EXISTENTIALISM/ Lecture, Discussion

An introduction to major writers and themes of existentialism from Dostoyevsky, Kierkegaard, and Nietzsche to Sartre, Camus, and Simone de Beauvoir. Beginning with a study of the cultural origins of existentialism as a distinctively modern, European sensibility, we explore why and how existentialist thought has found expression with unique appropriateness as both philosophical literature and literary philosophy. Prerequisite: permission of the instructor.

Ms. Kaufmann

Offered every other year

185 JOYCE, PROUST AND KAFKA

Focuses on the writers with the most impact in the twentieth century. The readings and discussions of representative works by these writers will lead to investigations of the ways in which these three writers seek to redefine our perception of literature and the world by concluding the nineteenth-century traditions and finding the modernist expression. Among the topics to be discussed are: (1) memory and consciousness; (2) form and language; (3) reality and language; and (4) the artist's place in society.

Ms. Acosta-Cruz

Offered every other year

192 LANGUAGE IN SOCIAL CONTEXT

This is a look at language from the perspective of sociolinguistics. The course will view spoken discourse as situated action, whose meaning both reflects and creates the social context in which it takes place, whether in the everyday world or the world of the literary text. Starting with the notion of speech communities, the class will consider how verbal performance varies as individuals and groups assume different roles in different situations. Topics will include ritualized speech events, linguistic subcultures, male-female language, code-switching, bilingualism, and functions of language in the classroom. Discussion and reading will be supplemented by several short observational tasks. The class is limited to twenty students.

Ms. Nigrosh

Offered every year

193 INTERPRETATIONS OF DREAMS

Refer to course description under Psychology 260.

Mr. Kaplan

197 THE FAUST THEME IN LITERATURE AND MUSIC

Refer to course description under German 197.

Mr. Kaiser

205 FEMINIST FILM THEORY AND CRITICISM

This course explores the emergence of feminist film criticism from the women's movement of the 1970s and its subsequent "coming of age" via such theoretical frameworks as semiotics, psychoanalysis, and Marxism. Emphasis is placed on understanding the role of critical theory as appropriated by feminist analysis of film and culture. Reading includes work by Freud, Lacan, Metz, de Laurentis, Foucault, Mulvey, Johnston, and Bovenschen. Theory is related to the practice of a range of film makers such as Deren, Arzner, Hitchcock, Godard, Ackerman, and Rainer.

Ms. Butzel

Offered every other year

210 STUDIES IN POST-MODERNIST FICTION

A comparative approach to the study of the protean nature of post-Modernist fiction. Readings and discussions of writers who have extended (or eliminated) the boundaries of genre, form, substance, and interpretation of literature. The works

are analyzed in the light of the classical or modern traditions they transform. Authors examined are Borges, Cortazar, Calvino, Sorrentino, Vargas Llosa, Beckett, Garcia Marquez.

Ms. Acosta-Cruz

Offered every other year

215 WOMEN'S WRITING IN CONTEMPORARY FRANCE

This course is a study of major works of French fiction and theory as they question and illuminate each other. We explore these works in the context of the contemporary French feminist controversy between theories of equality and theories of difference, particularly as they relate to notions of *l'écriture féminine*. Readings include Colette, Simone de Beauvoir, Helene Cixous, Marguerite Duras, Luce Irigaray, Monique Wittig, Julia Kristeva. Prerequisite: permission of the instructor.

Ms. Kaufmann

Offered every other year

230 COMIC MIRRORS AND SELF-CONSCIOUS HEROES IN FRENCH THEATER

A study of comic tradition of self-referential theater in France touching on the play-within-the-play, masques, masquerades, as well as the ironic exposures of theatrical conventions and parodies of dominant theatrical styles. Closely examines seventeenth-century classicism through contemporary absurdist and avant-garde theater. Representative playwrights include: Molière, Marivaux, Musset, Feydeau, Anouilh, Sartre, Ionesco and Genet.

Mr. Spingler

Offered every year

240 STUDIES IN NARRATIVE FORM: CLUSTER COURSE/ Lecture, Discussion

An exploration of narrative both structurally and historically with an emphasis on literary fiction as a particular kind of narrative form. We follow the evolution of narrative in Western literature through the aesthetics of realism and modernism, as they have been elaborated in fiction and critical theory. The relevance of nonliterary narrative to the understanding of fiction also is discussed. Texts include both novels and films.

Ms. Acosta-Cruz, Mr. Conron, Ms. Kaufmann

Offered every other year

251 SEMINAR IN LITERARY CRITICISM/ Seminar

Seeks to develop critical sensibilities by concentrating on three major modes of literary criticism: textual, psychoanalytic, and Marxist. We read and discuss both original sources (Freud, Marx, and others) and a wide range of criticism based on their methods. An attempt is made to demonstrate that a complete critical engagement with a literary work must start from a close examination of the text itself, proceed to a consideration of the interaction between text and the author's life and mind, and from there, to an investigation of the social setting that conditions text, life, and mind. In order to unify discussion and development, the seminar centers around a thorough critical occupation with the works, life, and society of Franz Kafka. Primary material includes his short stories, his novel *The Trial*, *Letter to His Father*, and *Letters to Milena*.

Mr. Hughes

Offered every other year

276 SYMBOLISM IN EVERYDAY LIFE: MYTH, DREAM AND SYMBOL

Refer to course description under Psychology 276.

Mr. Kaplan

277 THE CREATIVE PROCESS

Refer to course description under Psychology 277.

Mr. Kaplan

Computer Science

The computer science major has been designed for the education of computer scientists with a solid background in mathematics and significant work in a related area. Students may concentrate in various areas of computer science. For more information, refer to the listing for the Department of Mathematics and Computer Science.

Economics

DEPARTMENT FACULTY

Frank Puffer, Ph.D., *chair*: regional economics, African economic development, health economics

Stephen A. Baker, Ph.D.: international economics

John C. Brown, Ph.D.: economic history

Wayne B. Gray, Ph.D.: labor economics, econometrics, microeconomic theory

Robert C. Hsu, Ph.D.: economic development, comparative economic systems, international economics

Alexandros Mourmouras, Ph.D.: macroeconomics

Attiat F. Ott, Ph.D.: economic theory, public finance, health economics

Don M. Shakow, Ph.D.: Marxist economics, resource and energy economics, econometrics

Roger C. Van Tassel, Ph.D.: international trade and finance, public economy

E.C.H. Veendorp, Ph.D.: microeconomic theory

Maurice D. Weinrobe, Ph.D.: monetary economics, economics of housing

EMERITUS

Howard W. Nicholson, Ph.D

UNDERGRADUATE PROGRAM

The undergraduate program is designed to give the student a comprehensive grasp of the underlying principles and functions of economic institutions and to develop habits of systematic thought.

Goals of the Major

The rationale for economics majors can be stated briefly and simply: We believe economics offers a useful insight into a better understanding of fundamental human behavior in the decision-making process and in a great variety of national issues. While we recognize that economics alone seldom gives answers, we also feel that there are few issues, at least in the social sciences, in which the contribution of formal economic analysis does not play a necessary role. There are obviously some advantages in an economics major besides a more broadly accepted educational value. It is a good preparation for law, business, and a number of other professional and nonprofessional careers. However, the emphasis of our program is the educational one. The major in economics is devised to help the student think and develop.

Economics 10, *Issues and Perspectives*, is prerequisite for all 100-level courses and for Economics 11, *Principles of Economics*. Economics 11 is prerequisite for 200-level courses in the department. Individual courses may carry additional prerequisites. All majors in economics must take Economics 10, Economics 11, Economics 160 *Statistics*, and Economics 205.1, and 205.2, *Intermediate Theory*. A 2.0 grade point average in these core courses is required for credit towards the major. Students

are expected to take no less than twelve courses and no more than nineteen courses in economics. Of these courses, at least ten must be offered in the Economics Department, and two may be "related" courses. Special projects or internships do not count toward the requirements of ten economics courses. Two courses at the 200-level must be taken in addition to *Microeconomic Theory* (205.1) and *Macroeconomic Theory* (205.2). Students are advised to complete 205.1 and 205.2 by their junior year and to take no more than five economics courses in any year. Some courses may be offered only in alternate years.

Senior majors with strong records may be accepted by the department as candidates for departmental honors. For students to receive departmental honors, they must successfully complete an honors course or project. All majors may have a department adviser to assist in developing a program of study. Students planning on pursuing graduate work in economics are strongly advised to take mathematical economics and at least one calculus course. Students should refer to the *Undergraduate Economics Handbook* or to an undergraduate adviser for further information regarding requirements, course prerequisites, appropriate sequence of courses, and honors.

GRADUATE PROGRAM

The University offers a program of graduate study and research leading to the doctor of philosophy in economics. Graduate students may elect to take a limited amount of work in related courses offered by other departments.

Scholarships and fellowships are available for a limited number of well-prepared students. These appointments exempt their holders from tuition fees, and some carry stipends in varying amounts. Several teaching assistantships are also awarded, which enable graduate students to gain experience in undergraduate instruction. These cover remission of tuition and a cash payment, currently up to \$5,700 for part-time work.

An Earhart Foundation Scholarship is awarded every year to an outstanding candidate selected by the Earhart faculty sponsor. The award covers a full tuition plus a cash stipend. No teaching responsibility is attached to the award.

Two full academic years of graduate work, or its equivalent in part-time work, are necessary for admission to Ph.D. candidacy. One of these years must be spent in residence at Clark University. "In residence" is broadly defined as work done at Clark University. All candidates for the Ph.D. in economics are required to demonstrate proficiency in economic theory, econometrics, and mathematical economics and to complete three selected fields.

Econometrics and mathematical economics are satisfied by passing designated courses offered in the department or, in the case of prior preparation, by passing a test given by the department.

The economic theory requirement includes micro-theory, macro-theory, and the history of doctrine. The student meets the economic theory requirement by satisfactory completion of the theory courses, Economics 301.1, 301.2, 302.1, and 302.2, and by passing a six-hour preliminary examination.

Upon completion of economic theory and two of the required special fields, the student is admitted to candidacy for the Ph.D. These fields may be selected from among the following: monetary economics, public finance, industrial organization, international economics, comparative economic systems, advanced theory, regional economics, economic development, labor economics, or one field selected from related subjects. Not all graduate field courses are offered each year. At least two field courses are offered annually. Typically, two fields are taken during the second year, and the remaining field requirement is completed, along with beginning the dissertation, during the third year.

Soon after having completed the field requirements, each student is expected to develop a written prospectus of a dissertation. The student then makes a presentation at an informal conference with all graduate students and faculty invited to attend. After the presentation, the primary adviser, in consultation with the chairman, appoints the dissertation committee if the topic is judged feasible.

Upon completion of the dissertation in a form acceptable to the committee, the candidate makes a copy of the dissertation available to the department, the faculty, and graduate students. After a period of approximately two weeks, to permit sufficient time for reading of the dissertation, the candidate presents the dissertation at a seminar open to all faculty and graduate students in the department. Final approval of the dissertation is granted by the committee after consideration of any suggested changes or challenges arising from the seminar. If five years have elapsed from the admission to candidacy, the student must retake the preliminary examination. A dissertation cannot be defended if more than five years have elapsed since the passage of the preliminary examination.

The dissertation must be a real contribution to knowledge, based upon independent research, convincingly presented, and acceptably written. Published articles may be accepted by the department instead of a dissertation.

Some teaching and research experience at Clark, or other such teaching and research as the department may regard as equivalent, is prerequisite to the doctor's degree.

Students enrolled in the Ph.D. program may be awarded the M.A. degree upon satisfactory completion of a two-year residency and preliminary exam. In the case of students who do not continue toward the Ph.D., the M.A. may be awarded upon satisfactory completion of twelve required courses or one-year residency, a M.A. thesis and an oral exam.

A student should discuss program plans with the graduate student adviser on or before registration day and secure approval of the course program.

INSTITUTE FOR ECONOMIC STUDIES

The Institute for Economic Studies, funded with an initial grant from the John M. Olin Foundation, began its operation in January 1980. The institute's main objectives are to:

1. research significant economic issues and propose policy options to deal with them;
2. disseminate the results of the research—particularly its policy recommendations—to a broad audience.

The institute provides a framework within which new curricula and teaching methods may be developed. In addition, a Scholars in Residence Program was instituted in 1984 to stimulate the exchange of ideas and dialogue between guest scholars and members of the institute and economics faculty.

The institute director is Professor Attiat F. Ott.

COURSES

10 ISSUES AND PERSPECTIVES/ Lecture, Discussion

The student is introduced to the vital contribution economics can make to systematic thought and understanding by analysis of important current policy issues. Rather than emphasizing economic theory, the course begins with issues in the social sciences that are of obvious and important concern. From a study of issues, the course proceeds to show how development and use of some very basic economic concepts can aid materially in the analysis. Open to freshmen. Multiple sections.

Staff

Offered every semester

11 PRINCIPLES OF ECONOMICS/ Lecture, Discussion

Introduction to economic analysis. Develops a basic set of economic concepts utilized in the 200-level courses offered in the department. Elements of price and income theory are emphasized. Policy questions are treated both to reinforce concepts and to illustrate applicability of the analysis. Open to freshmen. Prerequisite: Economics 10.

Staff

Offered every semester

88 DIRECTED READINGS

Offered for variable credit.

Staff

Offered every year

89 SPECIAL PROJECTS

Offered for variable credit.

Staff

Offered every year

108 INTERNATIONAL FINANCIAL DEVELOPMENTS/ Lecture, Discussion

Introduction to the basic principles of international economics. The course examines the development of the international monetary system and current problems. Students planning to take Economics 207 or 208 should not take 108. Prerequisite: Economics 11.

Mr. Baker

Offered every year

109 SOCIALIST THOUGHT/ Lecture

An exposition of socialist economic theory as a coherent body of knowledge uniquely suited to the analysis of major socioeconomic issues.

Mr. Shakow

Offered periodically

113 MONETARY ECONOMICS: THEORY AND POLICY/ Lecture, Discussion

The theory of money and its role in the modern economy are examined as are determinants of the supply of money and analysis of the role of monetary policy in stabilization policy. Commercial banks and nonbank financial intermediaries are studied.

Mr. Weinrobe

Offered every year

123.5 CONTEMPORARY POLITICAL ECONOMIC PROBLEMS: OPINION AND ANALYSIS/ Seminar

Examines the basis of intergroup differences in attitudes on questions of economic policy. Emphasizes interaction of values, facts, and analysis in opinion formation.

Mr. Van Tassel

Offered periodically

125 HEALTH ECONOMICS/ Lecture, Discussion

This course examines the economic processes and activities of health care systems and institutions. Major issues including competition, role of governments, and insurance are among the topics that are investigated to assist students to understand how economic considerations affect the delivery of care.

Staff

Offered periodically

126 PUBLIC POLICY TOWARD BUSINESS/ Lecture, Discussion

Examines the various types of industrial organization, the degrees of monopoly in competition, and the development of public policies that affect business. Among issues traced are the development of antimonopoly regulation, consumer

protection, and public utilities. Business performance and government regulation are related to criteria from economic theory.

Mr. Veendorp

Offered every other year

128 ECONOMIC DEVELOPMENT/ Lecture, Discussion

See course description under Economics 228.

Mr. Hsu

Offered every other year

155 THE ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT/ Lecture

A review of political economic problems associated with such natural resources as agricultural land, energy goods, and minerals—as well as a resource common to all of us, our natural environment. Typical issues to be analyzed include the assessment of environmental impacts within a market-oriented economy, the potential role of international cartels in resource allocation, and the assessment of nuclear generation from an economic standpoint.

Mr. Shakow

Offered periodically

160 INTRODUCTION TO STATISTICAL ANALYSIS/ Lecture, Discussion

Examines basic concepts and techniques of statistical method in economic analysis: descriptive statistics, probability theory, sampling distribution, standardized normal distribution and other related distributions, simple and multiple regression, simple forecasting, and statistical decision-making.

Mr. Puffer

Offered every year

171 FUNDAMENTAL MATH FOR ECONOMICS/ Lecture, Discussion

This course introduces the mathematical tools used in economic analysis. After completing this course, the student should feel comfortable with the mathematical techniques likely to be encountered in an undergraduate economics program. Applications will be drawn from a variety of fields within economics, but with particular emphasis on microeconomics. Prerequisite: Economics 11.

Staff

Offered periodically

176 COMPARATIVE ECONOMIC SYSTEMS/ Lecture

Surveys both the major theoretical models of economic systems and the actual workings of contemporary economic systems. Selective aspects of mixed economies, market socialist economies, and centrally planned economies are examined. Topics include the indicative planning in France, permanent employment system in Japan, industrial democracy in Sweden, workers' self-management in Yugoslavia, economic reforms in Hungary, and resource allocation in the USSR.

Mr. Hsu

Offered every year

177 CHINESE AND JAPANESE ECONOMIES/ Lecture, Discussion

A comprehensive survey of the Chinese and Japanese economies—their development, institutions, and policies. Topics include historical background, agricultural development, industrial organization and development, fiscal and monetary policies, employment and labor, Sino-Japanese relations, and relations with the U.S.

Mr. Hsu

Offered every other year

205.1 MICROECONOMIC THEORY/ Lecture, Discussion

Describes and analyzes how a market-oriented economy functions in answering the five basic economic questions. These are: (a) What commodities to produce?

(b) How much of each to produce? (c) What productive techniques to use and how to provide incentive? (d) How to distribute the output among the various members of society? (e) What provision to make for the future? Interspersed with the theory, the course contains frequent examples that demonstrate the use of microeconomics in solving problems faced by the decision-making unit in both the private and public sectors.

Staff

Offered every year

205.2 MACROECONOMIC THEORY/ Lecture, Discussion

Focuses on the forces that affect the overall performance of the economy. A study of the determinants of economic activity (such as consumption, investment, government purchases, and exports); measures of economic performance (such as the level and rate of growth of national income and product, the level of employment and unemployment, the general price level, and the nation's balance of international payments). Also deals with specific, current economic problems facing the U.S. and discusses public policies instituted to deal with them and the repercussions of some of these policies on world economies.

Staff

Offered every year

207 INTERNATIONAL ECONOMICS/ Lecture, Discussion

Applies and develops concepts of economic theory to such topics as: determinants of international and regional specialization and trade, the theory of tariff intervention, the balance of payments, adjustment forces and disequilibria, and application of theory to important issues of international trade. Prerequisite: Economics 205.1.

Mr. Van Tassel

Offered every year

208 INTERNATIONAL MONETARY THEORY/ Lecture, Discussion

This course studies the impact of international trade and investment on macroeconomic policy and problems of the international monetary system. Prerequisite: Economics 205.2 or 207.

Mr. Van Tassel

Offered every other year

209 MARXIST ECONOMIC THEORY/ Lecture

An introduction to Marxist economic theory. A comparison is made between the development of Marxist and neoclassical economic analysis. Prerequisite: permission of instructor.

Mr. Shakow

Offered every other year

215 PUBLIC EXPENDITURES

Examines issues and priorities related to the size and composition of the federal budget and federal programs. Evaluation of federal budget expenditures and program levels according to criteria of cost-benefit analysis and cost effectiveness are carried out. Issues relating to private-public use of resources and how public policy affects these uses are also examined.

Ms. Ott

Offered every other year

216 TAX SYSTEMS AND POLICIES

Analyzes the federal tax system and U.S. tax policies. Explains emerging issues in federal taxation including tax equity, the effect on income distribution, the relative tax burden of the rich and the poor, and alternative tax systems as well as reform proposals to restructure the U.S. tax system. Tax incentives as a goal for economic growth are also discussed.

Ms. Ott

Offered every other year

222 LABOR/ Discussion

Applies the concepts of labor supply and labor demand in a basic model of labor markets. The model is used to analyze the results of the labor market: wages, employment, and unemployment. The analysis is modified to allow for market imperfections and nonmarket forces, including trade unions and the government. Further topics are discussed, including wage discrimination and income inequality. Prerequisite: Economics 205.1 or permission of instructor.

Mr. Gray

Offered every year

224 ECONOMIC THOUGHT AND MODERN CIVILIZATION/ Lecture

Broadly interdisciplinary. Emphasizes the relationship between economics and related areas, such as philosophy, ethics, political science, sociology, mathematics, and statistics. From the perspective of economic thought, the course traces developments in economic analysis, showing how economic analysis has affected and been affected by contact with other disciplines. The course considers how modern economic thought has come to diverge in essential aspects from the ideas of social philosophers like Adam Smith and Karl Marx and emphasizes what scientific economic analysis does and does not enable us to understand about modern social problems and issues.

Mr. Shakow

Offered every other year

228 ECONOMIC DEVELOPMENT/ Lecture, Discussion

Examines the major theories of economic development, the major problems confronting less developed countries, and the policies and strategies appropriate for economic development. Topics include agricultural development, income distribution, industrialization strategies, foreign aid and investment, population, labor and employment. Offered in alternate years with 128.

Mr. Hsu

Offered every other year

229 MODELING/ Lecture, Discussion

This course examines a variety of macroeconomic modeling techniques, including input-output, Keynesian, and growth models. Uses computers extensively for model estimation and simulation.

Staff

Offered periodically

235 ECONOMICS OF HOUSING/ Lecture

An examination of the nature of housing, including an investigation of supply and demand in the housing market, the relationship between housing and the aggregate economy, the role of housing finance, and the role of the government in the housing market. Prerequisite: Economics 113.

Mr. Weinrobe

Offered periodically

242 EUROPEAN ECONOMIC HISTORY/ Lecture, Discussion

This course applies the tools of economic analysis to help understand the major stages of European economic development, from the feudal economy to the European Economic Community. Primary emphasis will be on the industrialization of Great Britain, Germany, France and Russia and the postwar restructuring of the European economy.

Mr. Brown

Offered every year

243 AMERICAN ECONOMIC HISTORY/ Lecture, Discussion

This course offers a comprehensive survey of the development of the United States economy from a colonial backwater to a leading industrial power. It emphasizes the use of economic reasoning to understand historical controversies

such as the struggle over slavery, economic imperialism, and the causes of the Great Depression.

Mr. Brown

Offered every year

250 ECONOMICS OF SPORT/ Lecture, Discussion

This course applies economic analysis to the sports industry. While the primary focus will be on professional team sports, individual and "amateur" sports are covered as well. Labor relations, antitrust law, public subsidization of sports facilities, discrimination and sports broadcasting are among the topics that are covered from an economics perspective.

Mr. Puffer

Offered periodically

255 PERSONAL INCOME DISTRIBUTION: THEORIES AND POLICIES

Surveys theories of income distribution and sources of income inequality in the U.S. Also discussed are issues dealing with income redistribution policies in the U.S. and foreign countries.

Ms. Ott

Offered every other year

257 RESOURCE ECONOMICS/ Lecture, Discussion

This course examines some of the issues associated with the economics of natural resources. Topics discussed will be chosen from the following: the theory and analysis of renewable and nonrenewable resources, resource cartels, resource scarcity and the economy, and environmental economics. Topics are discussed at both theoretical and empirical levels. Proper policies are discussed to encourage resource conservation, the problems of common property resources, and the importance of resource scarcity to the economy. Prerequisite: Economics 205.1.

Staff

Offered periodically

260 INTRODUCTION TO MATHEMATICAL STATISTICS/ Lecture

Introduction to the theory of statistics from the managerial point of view. Economics 271 should be taken concurrently, or as a prerequisite.

Mr. Shakow

Offered periodically

271 INTRODUCTION TO MATHEMATICAL ECONOMICS/ Lecture, Discussion

An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Prerequisite: permission of instructor. Offered for variable credit.

Mr. Veendorp

Offered every year

273 FORECASTING/ Lecture, Discussion

This course investigates a number of forecasting techniques commonly used in economic analysis. Among the techniques covered are time series analysis, econometric models, simulation models and expectations surveys. Prerequisite: Economics 160 or equivalent.

Mr. Puffer

Offered periodically

277 REGIONAL ECONOMICS/ Lecture

Examines theoretical and practical aspects of economic development, cyclical changes and trade between regions of the United States. Location theory, growth trends, wage and income differentials, structural unemployment, interregional input/output tables, and inequalities in income distribution are considered.

Mr. Puffer

Offered every other year

281 SENIOR HONORS

Offered for variable credit

Staff

Offered every year

282 HONORS

Eligible students selected by the department may work off campus for a summer and a semester as junior professional economists in business, government, or industry and receive academic credit. Offered for variable credit.

Staff

Offered periodically

299.9 INTERNSHIP

Students spend a semester working full- or part-time outside the University as part of their academic experience. To qualify, the internship experience must significantly involve an extension, embodiment, or illustration of previous or concurrent systematic academic work in economics. Offered for variable credit.

Staff

Offered every year

301.1 MICROECONOMICS/ Seminar

Mr. Veendorp

Offered every other year

301.2 MICROECONOMICS/ Seminar

Staff

Offered every other year

302.1 MACROECONOMICS/ Seminar

Ms. Ott

Offered every year

302.2 MACROECONOMICS/ Seminar

Ms. Ott

Offered every year

313 MONETARY ECONOMICS/ Seminar

Mr. Weinrobe

Offered every other year

325 PUBLIC FINANCE/ Seminar

Ms. Ott

Offered every other year

326 INDUSTRIAL ORGANIZATION/ Seminar

Mr. Veendorp

Offered every other year

327 INTERNATIONAL TRADE/ Seminar

Mr. Baker

Offered every other year

328 ECONOMIC DEVELOPMENT/ Seminar

Mr. Hsu, Mr. Puffer

Offered every other year

365 BASIC ECONOMETRIC THEORY/ Lecture

Qualified undergraduates may take Economics 365 with the instructor's permission.

Mr. Shakow

Offered every year

366 APPLIED ECONOMETRICS/ Seminar

Mr. Gray

Offered every other year

377 REGIONAL ECONOMICS/ Seminar

Mr. Puffer

Offered every other year

Education

DEPARTMENT FACULTY

Helen J. Kenney, Ed.D., *chair*: curriculum development, instructional theory, psychoeducation, evaluation

David S. Zern, Ph.D.: cognitive development, socialization, values and education

PART - TIME FACULTY

Clarence W. Bennett, Ed.D.: elementary mathematics education

Barbara S. Berka, M.A., science education: elementary science education

Denis J. Cleary, M.A.T., education, history: secondary curriculum and instruction

Susan J. Freeman, M.Ed.: reading

Elaine M. Holland, M.A., education: psychoeducational diagnosis

Karen Mutch-Jones, M.Ed.: special education

Kenner H. Myers, M.S.: early childhood education

Joyce S. Rettstadt, M.A., education: creative arts

Katherine Sawdon, M.Ed.: special education

Nathaniel C. Seale, M.Ed.: child study

Reena Friedman Slovin, M.Ed., C.A.S.: psychoeducational diagnosis and assessment

Susan D. Starr, M.Ed.: elementary education

AFFILIATE FACULTY

David R. Braley, M.A., M.Ed.: school-university liaison

Thomas P. Friend, M.Ed.: school-university liaison

David J. Kneeland, M.A.: school-university liaison

Elinor M. McKeon, M.Ed.: special education

Alexander J. Radzik, M.Ed.: school-university liaison

GRADUATE PROGRAM

Marque Bagshaw, Ed.D.: educational administration, decision making, organizational change, strategic planning

William C. Kvaraceus, Ed.D.: measurement, social deviance

W. George Scarlett, Ph.D.: child development, early childhood education

Gaston Schaber, Ph.D.: comparative education

Cooperating Clark University academic faculty

UNDERGRADUATE PROGRAMS

Undergraduate education constitutes a major part of the work of the department. In conformity with its policy of emphasizing the importance of the liberal arts as a basis for educational practice, the department offers its courses and programs as electives and organized sequences related to an academic major. Clark students in education lay a broad foundation of scholarship in the liberal arts and take a concentration in an academic field to lead into specific teaching certification and preprofessional certificate programs.

The various undergraduate programs are designed for students interested in preparing for careers as educators in public and private schools and in nonschool, human-service oriented settings such as family life institutes, day care centers for children and the elderly, youth organizations, courts, hospitals, correctional and rehabilitation institutions, and social service agencies. In conjunction with various academic departments, these programs serve both as preparation for professional study at the graduate level and for entry into beginning teaching and specialist positions. The following programs are provided through integrated course work and field experiences:

(1) *Elementary Education*

The elementary-level (grades 1-6) teacher education program has been approved by the Interstate Certification Compact (ICC), a legally based certification reciprocity agreement between Massachusetts and each of thirty-one other states and the District of Columbia.

(2) *Elementary Education and Special Education*

The special education sequence, taken as an extension of the elementary teaching program, is also approved by the Interstate Certification Compact and leads to dual certification in elementary education and special education.

(3) *Early Childhood Education*

The early childhood education sequence leads to Massachusetts certification in grades K-3 and has been approved by the Interstate Certification Compact (ICC).

(4) *Secondary Education*

Secondary mathematics, biology, chemistry teaching certification sequences (grades 9-12) have been approved by the Interstate Certification Compact (ICC).

(5) *The Psychoeducational Clinician Sequence*

The psychoeducational clinician sequence consists of four courses, including a two semester practicum, providing intensive first level training in psychoeducational assessment and individualized educational planning. The program is designed especially for students in the junior and senior years who are considering advanced graduate work in school psychology and related professional fields.

(6) *The Human Services Sequence*

The human services sequence consists of four courses, including a two semester practicum, designed for students interested in pursuing careers and/or graduate study in education and related professional fields such as social work, health and community education, rehabilitation, counseling, and guidance. Students' course work and field experiences deal with diverse groups including children, families, and the aged, in settings which may include schools, the court system, mental health agencies, and institutions. Students acquire conceptual as well as experiential skills through a balance of study and applied field work. Interaction with a variety of human service providers and systems in the Worcester area serves to integrate material from the sequence.

(7) *The Elective Program*

Students may elect courses in education for general interest and background or to fill elective requirements in a departmental academic major. The department has crosslistings with English, geography, history, linguistics, psychology, and sociology.

The teaching certification sequences are limited to students who have completed major requirements at a satisfactory level of scholarship. The decision to elect one of the organized teaching programs must be made by the sophomore year at the latest. Admission to and continuance in the program must be approved by the Department of Education, and—for secondary school and special subject teaching—must also be approved by the appropriate academic department for competency in subject matter areas.

Students interested in professional education are encouraged to consult with the undergraduate program coordinator of the department early in their careers at the University to discuss overall program planning.

GRADUATE PROGRAMS

The department offers one program leading to the degree of master of arts in

education, another leading to the degree of doctor of education, and a third leading to dual M.B.A./Ed.D. degrees.

MASTER OF ARTS IN EDUCATION

This degree program is designed to extend the professional training of experienced educational practitioners. The program may be used to enrich the general theoretical background relevant to a candidate's area of educational practice and to develop new professional skills in individually-tailored program concentrations. Master's candidates concentrate their work in areas where there is depth in course offerings available through the facilities of the Department of Education and cooperating academic departments in the University. Clusters have been developed in special education, early childhood education, academic subject fields, environmental education, creative arts and education, and educational management.

Admission Requirements

In addition to the general Graduate School admission requirements, a personal interview is usually required by the Department of Education in order to determine the fit between the program resources and a candidate's goals and interests.

Degree Requirements

The course of study consists of a minimum of eight full course units with an additional requirement to be completed by one of three options: (a) an acceptable thesis, (b) the master's seminar in which an independent major paper is prepared and presented to fellow graduate students and members of the staff, or (c) two additional full courses. The passing of a final oral examination is required of all candidates.

DOCTOR OF EDUCATION

The doctor of education degree program is an organized course of study, extending over a three- to four-year period, which enables mid-career practitioners to obtain advanced professional training without unduly disrupting their work in the field. The program is planned for the experienced educator of proven ability who expects to assume high-level responsibility in administrative, planning, training, and evaluation roles in schools, government agencies, private organizations, or institutions of higher learning.

All doctoral students complete a core curriculum aimed at imparting a basic understanding of the analytic techniques, the social and behavioral determinants, and the management principles that will contribute to the development of new solutions to significant problems in education. The student then selects one of two program options: the learning specialist or the administrator-planner. The two are closely related. The learning specialist, as a social and psychological analyst, is concerned with the content and methodology of educational programs for a particular learner or group of learners; the administrator-planner has the task of program development, implementation, and evaluation.

Two year-long research seminars are scheduled during the first two years of study. During the first year the student focuses on a specific topic of educational theory or practice as a basis for an analytic paper that typically leads to the development of a dissertation proposal. During the second year research seminar, the student formulates a research plan that includes specification of the theoretical framework, methodology, instrumentation, and statistical design for the proposed study. In the third year, the student conducts the research and by the fourth year completes the required dissertation report.

A small and select group of graduate students ensures the advantages of program flexibility with much opportunity for close and continued contact between

faculty and students. All program designs have a significant degree of individuality, reflecting the past training, experience, and professional goals of the students. The individual study plan is developed within a framework of departmental, University, and field resources.

DUAL M.B.A./Ed.D. DEGREE PROGRAM

A dual degree M.B.A./Ed.D. program has been established between the Department of Education and the Graduate School of Management for graduate students who wish to focus on a career in the management of educational institutions.

Admission Requirements

Admission to the doctoral program requires the completion of an acceptable baccalaureate and master's degree, either at Clark or elsewhere. Students who obtain their master's degrees with the department at Clark, and who wish to continue their doctoral studies in the department, must apply for continued study at the doctoral level.

A candidate must give satisfactory evidence of aptitude and capacity for graduate study as reflected in academic performance and aptitude tests (either the Miller Analogies or the Graduate Record Examination). Professional experience, which demonstrates a high level of competence and leadership ability, also is required.

Candidates for the dual M.B.A./Ed.D. degree program must also meet the admission requirements for the M.B.A. degree.

Degree Requirements

Minimal requirements for candidates at the doctoral level demand the equivalent of two years of graduate course work beyond the master's level. A doctoral candidate must pass comprehensive examinations at the end of course work and complete a doctoral dissertation.

Candidates in the dual M.B.A./Ed.D. degree program must fulfill requirements for the M.B.A. degree as determined by the Graduate School of Management.

COURSES

192 LANGUAGE IN SOCIAL CONTEXT

Refer to course description under Linguistics 192.

Ms. Nigrosh

201.1 THE CHILD AND THE EDUCATIVE PROCESS/ Lecture, Discussion

Deals with the behavioral and social science foundations of selected aspects of the educative process as they pertain to the elementary school-age child. Theoretical concepts and principles of learning and development are considered in relation to: the setting of educational objectives, instructional strategies, motivation, transfer, and assessment and evaluation procedures. Required in the elementary and special education sequences leading to certification.

Ms. Mutch-Jones

Offered every year

201.2 THE EXPERIENCE OF ADOLESCENCE/ Lecture, Discussion

Explores adolescent development through theory and research drawn from the behavioral and social sciences. Students study, discuss, and report on topics of central importance to education during the adolescent years. Special social and

interpersonal problems and issues confronting today's adolescent are considered. Required in secondary level and special subject sequence leading to certification.

Mr. Zern

Offered every year

209 SIMULATION AS A LEARNING DEVICE

Refer to course description under Geography 209.

Staff

211 FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING/ Lecture, Discussion

A dual focus is on: (1) illustration and analysis of various cognitive and social interpersonal models of teacher and student behavior in the classroom setting, and (2) introduction to and development of skills involved in systematic observational methodologies, with the classroom as the natural setting. Students carry out a series of assigned observational tasks and execute their own individual projects. May be taken for credit as Psychology 211.

Mr. Zern

Offered every year

223 CONTEMPORARY POLITICAL ECONOMIC PROBLEMS: OPINION AND ANALYSIS

Refer to course description under Economics 123.5.

Mr. Van Tassel

230 THE INSTRUCTIONAL PROCESS/ Lecture, Seminar

Examines the goals and underlying values of the school experience with particular reference to the theoretical and empirical literature relevant to the role of the teacher, instructional theory, and evaluation of learning. Various teaching models, traditional and contemporary, are analyzed and critiqued. Classroom observations and a field-based project are required.

Mr. Cleary

Offered every year

234.1-234.2 FIELD EXPERIENCE: SPECIAL EDUCATION AND HUMAN SERVICES/ Seminar, Field placement

These courses provide direct, supervised experience within a wide range of educational and human service agencies. Placements are based upon assessment of students' experience, goals, and academic backgrounds. Placement possibilities include schools, mental health centers, institutions, the courts, substance-abuse centers, crisis agencies, and social planning agencies. A University coordinator maintains ongoing contact with the student and placement site to ensure continuity from academic to field work. A concurrent weekly seminar provides the opportunity for students to analyze their field work experience. Special note: These courses may be taken as a full year, two course sequence (Education 234.1 and 234.2) or as a single course either semester (Education 234.1).

Mr. Seale

Offered every year

235 FIELD EXPERIENCE IN THE ELEMENTARY SCHOOL/ Seminar, Field placement

Provides an initial experience in the elementary classroom and an introduction to the elements of teaching—curriculum planning, instructional strategies, classroom management, etc. Students spend five hours per week in an assigned classroom assisting the teacher and working with small groups of children. In teams, students develop and teach a unit of instruction. A weekly seminar addresses classroom experience and considers legal and program issues relating to

mainstreaming special needs students in the regular school setting.
Ms. Starr Offered every year

236 PSYCHOEDUCATION CENTER INTERNSHIP/ Seminar, Practicum
Provides systematic training in observation, testing, and tutoring of children and adolescents with learning problems. Includes experience both at the Psychoeducation Center and the referring schools, and participation in weekly seminars.
Ms. Sawdon Offered every year

241 SEMINAR: CLARK IN HISTORICAL PERSPECTIVE
Refer to course description under History 246.
Mr. Koelsch

247.1 CURRICULUM AND INSTRUCTION IN READING AT THE ELEMENTARY SCHOOL LEVEL/ Lecture, Discussion, Field placement
Presents the key elements of skill development, lesson planning, and instruction in reading at the elementary level (grades 1-6). In a two-hour weekly field experience students apply learnings from classroom lecture-discussions. Topics include stages of reading development, selection and organization of content, examination of self-designed and commercial materials, teaching/ learning activities, and evaluation of learning outcomes. Training is provided in informal assessment, diagnostic procedures, and use of standardized instruments for evaluation.
Ms. Freeman Offered every year

247.2 CURRICULUM AND INSTRUCTION IN READING AND LANGUAGE AT THE EARLY CHILDHOOD LEVEL/ Lecture, Discussion, Field placement
Deals with reading readiness and language development of young children. Key elements of skill development, lesson planning, and instruction in reading at the early childhood level (K-3) are stressed. In a two-hour weekly field experience students apply learnings from classroom lecture-discussions. Topics include stages of reading development, selection and organization of content, examination of self-designed and commercial materials, teaching/learning activities, and evaluation of learning outcomes. Training is provided in informal assessment, diagnostic procedures, and use of standardized instruments for evaluation.
Ms. Myers, Ms. Freeman Offered every year

248.1 CURRICULUM AND INSTRUCTION IN MATHEMATICS AT THE ELEMENTARY SCHOOL LEVEL/ Lecture, Discussion, Field placement
Deals with key elements of curriculum planning and implementation in mathematics for the elementary school: stating of objectives; assessment of initial learner status; selection and organization of content, materials, learning activities; instructional modes; evaluation of learning outcomes. A weekly two-hour, school-based field experience is required.
Mr. Bennett Offered every year

248.2 CURRICULUM AND INSTRUCTION IN MATHEMATICS AT THE EARLY CHILDHOOD LEVEL/ Lecture, Discussion, Field placement
Deals with key elements of curriculum planning and implementation in mathematics for the early childhood years. The need for developmentally appropriate content, materials, and learning activities is stressed as well as assessment of initial learner status and evaluation of learning outcomes. A weekly two-

hour, school-based field experience is required.

Ms. Myers, Mr. Bennett

Offered every year

251 EDUCATION AND SOCIAL POLICY/ Lecture, Discussion

Examines the relationship between social problems, social policy, and education. Conceptual tools for the analysis of social policies are utilized. Examination of existing programs and social agencies enables students to understand agency functions, client population, and the relationship between the individual agency and the larger social service network. Emphasis is placed on: social problems and social solutions, linking individuals and external primary groups with societal resource systems, and the impact of social policy change on individuals and institutions.

Mr. Seale

Offered every year

252 THE EARLY CHILDHOOD EDUCATOR: THEORY AND PRACTICE/ Seminar, Field placement

Each student spends eight to ten hours a week in a field placement and attends a weekly two-hour seminar. Day care centers, nursery schools, and kindergartens are considered as field sites. Seminar sessions address the nature of the developing child from infancy to age eight, the development of language and thought, the value of play, the early childhood curriculum, the role of the teacher, and the implications of family stress and pressure on the learning child.

Ms. Myers

Offered every year

254 AN INTERDISCIPLINARY PERSPECTIVE ON THE FIELDS OF MATHEMATICS AND SCIENCE/ Lecture, Discussion

Considers the history and development of mathematics and science as fields of knowledge and their relationship to other fields as a basis for understanding the aims for secondary school mathematics and science education. Implications for curriculum design and instructional methods are analyzed. Includes presentations by scientists and mathematicians.

Staff

Offered every year

259 SOCIAL PSYCHOLOGY OF IDENTITY

Refer to course description under Sociology 260.

Ms. Jacobs

266 PSYCHOEDUCATIONAL ASSESSMENT METHODS I: BASIC LEARNING PROCESSES/ Lecture, Discussion, Practicum

Intensive experience in administering and interpreting individual tests of intellectual and perceptual-motor functioning, with particular emphasis on the Stanford-Binet and Weschler Intelligence Scales. A central focus is on underlying theoretical constructs and the interpretation, integration, and application of educational and clinical data for individualized educational planning.

Ms. Holland

Offered every year

267 PSYCHOEDUCATIONAL ASSESSMENT METHODS II: ACHIEVEMENT AND RELATED PERSONAL AND SOCIAL FACTORS/ Lecture, Discussion, Practicum

Focuses on the administration of group and individual tests to determine achievement status and related personal and sociocultural factors such as aptitude, interests, personality, social and interpersonal competencies, cognitive style, environmental setting.

Staff

Offered every year

268 PSYCHOEDUCATIONAL PRACTICUM AND SEMINAR/ Seminar, Field placement

This field-based course provides a two-semester placement, eight to ten hours a week, within the pupil personnel department of a public school system. Each student is placed with a school psychologist and/or a counselor who functions as an ongoing supervisor. Practicum activities include supervised experience in conducting and interpreting psychoeducational assessments, obtaining social and developmental history information through home visits, and observing and participating in the development of individualized educational plans as part of the team evaluation process. A concurrent, weekly seminar focuses on the development, presentation, and discussion of comprehensive case studies.

Mr. Seale

Offered every year

269 THE SKILLED HELPER

An introductory experience designed for the development of the helping professional. Emphasis is placed on: dynamics of the helping relationship, basic interviewing skills, and approaches to counseling. Students who are not concurrently taking a field course are placed in a human service agency one half day per week.

Mr. Seale

Offered every year

271 FIELD EXPERIENCE: SECONDARY SCHOOL/ Seminar, Field placement

A field-based introduction to methods of teaching in the secondary school. Students work in a classroom and with teacher trainers to learn about planning instruction and managing classrooms. Differences and needs of individual students are emphasized. The course consists of (1) a field component of five hours per week, and (2) a weekly University seminar.

Staff

Offered every year

272.(1-9) CURRICULUM AND METHODS OF TEACHING AT THE SECONDARY LEVEL/ Seminar

Taken concurrently with student teaching for the first four weeks of the semester. Mornings are spent in a high school classroom and afternoons in a University seminar aimed at developing the student's ability to design instruction in a specific subject and at acquainting the student with the typical secondary curriculum. By the end of the course the student will have designed a unit and will have begun to teach it to one class. Offered every spring for one course credit.

272.1 Curriculum and Methods of Teaching Secondary English

272.2 Curriculum and Methods of Teaching Secondary Foreign Languages

272.3 Curriculum and Methods of Teaching Secondary Social Studies

272.4 Curriculum and Methods of Teaching Secondary Science

272.5 Curriculum and Methods of Teaching Secondary Art

272.6 Curriculum and Methods of Teaching Secondary Theater

272.7 Curriculum and Methods of Teaching Secondary Media Studies

272.8 Curriculum and Methods of Teaching Secondary Music

272.9 Curriculum and Methods of Teaching Secondary Mathematics

Academic and Education Department

Offered periodically

272 PRACTICUM IN THE SECONDARY SCHOOL/ Field placement

Intensive ten-week period of observation and teaching in a secondary (grades 9-12) classroom in the subject in which the student plans to teach. Individual supervision is given by a University supervisor and by a teacher in a cooperating

school. Prerequisite: permission of both the academic and education departments. Taken concurrently with 272 (1-9). Offered every spring for two course credits.

Academic Departments,
Staff, Cooperating Teachers

Offered every year

281 THE SOCIAL CONTEXT OF EDUCATION/ Lecture, Discussion

Reviews and analyzes social and cultural theories that provide an understanding of the process of education. Levels of interaction under consideration are the classroom, the school, and the community. Patterns of educating are considered within a cross-cultural context, and tools are provided to facilitate such analyses.

Mr. Zern

Offered periodically

284 YOUNG CHILDREN AND THE ARTS/ Workshop

Includes instruction in art, music, and drama for young children. A major aim is to raise the college student's own artistic consciousness and competency along with practical classroom and group application.

Ms. Rettstadt

Offered every year

288 INTERNSHIP MODULE IN ELEMENTARY EDUCATION

This integrated internship provides an intensive experience in elementary schools (1-6) in the Worcester area. It involves a full-time, supervised practicum, including theoretical course work, seminars, and conferences. The elementary module provides credit in the following areas:

288.1 Practicum (two full courses)/ Field placement

288.2 Critical Issues in Elementary Education (one-half course)/ Seminar

288.3 Individualized Instruction and the Integrated Curriculum (one full course)/ Lecture, Discussion

288.4 Creative Arts and Education (one-half course)/ Workshop

Special workshops in health and physical education for elementary school children are required. Limited to seniors who have completed major requirements and who meet departmental requirements for admission to the internship module.

Ms. Myers, Staff

Offered every year

289 INTERNSHIP MODULE IN EARLY CHILDHOOD EDUCATION

Provides an intensive experience in the early school grades (K-3) in the Worcester area. It involves a full-time, supervised practicum, including theoretical course work, seminars, and conferences. The early childhood module provides credit in the following areas:

289.1 Practicum (two full courses)

289.2 Critical Issues in Early Childhood Education (one-half course)/ Seminar

289.3 Individualized Instruction and the Integrated Curriculum (one full course)/ Lecture, Discussion

Limited to seniors who have completed major requirements and who meet departmental requirements for admission to the internship module.

Ms. Myers, Staff

Offered every year

291 PSYCHOLOGY AND EDUCATION OF HANDICAPPED CHILDREN AND YOUTH/ Lecture, Discussion

An introduction to the field of special education. Mental retardation, learning disabilities, emotional disturbance, hearing and visual impairment, physical handicaps, giftedness, and other categories of exceptionality are explored conceptually and practically. Current issues such as mainstreaming, labeling, and testing

also are reviewed.

Ms. Mutch-Jones

Offered every year

292 SEMINAR AND FIELD EXPERIENCE IN SPECIAL EDUCATION/

Seminar, Field Placement

The student works under the close direction of a cooperating teacher, for ten to twelve hours a week in a special educational setting (resource room, special class, special agency, etc.). A concurrent weekly University seminar considers language development, communication disorders, and rehabilitation issues.

Ms. Slovin

Offered every year

294 INTERNSHIP MODULE IN SPECIAL EDUCATION

Includes a supervised practicum in a moderate special needs setting at the elementary school level (Grades N-9) with related course work centering on psychoeducational assessment techniques, and individualized educational planning and implementation. Emphasis is placed on the integration and utilization of a full range of data in the design and implementation of individualized educational plans. Module credit is allocated as follows: 294.1 Individualized Educational Planning (one full course)/ Lecture, Discussion

Ms. Holland

Offered every year

294.1 Individualized Educational Planning (one full course)/ Lecture, Discussion

Ms. Holland

Offered every year

294.2 Practicum in Special Education (two full courses)/ Seminar, Field placement

Ms. Sawdon

Offered every year

299.1 DIRECTED READINGS - UNDERGRADUATE

Offered for variable credit.

Staff

Offered every year

299.2 DIRECTED RESEARCH - UNDERGRADUATE

Offered for variable credit.

Staff

Offered every year

299.4 FIELD PROJECTS - UNDERGRADUATE

Provides individualized and extended experiences in a wide variety of educational and human service agencies and institutions. Supervision is provided by the University and field agency personnel; combines related seminars and conferences, and readings as a basis for critical analysis of the experiences within the context of applied theory and practice. Offered for variable credit.

Staff

Offered every year

299.5 SPECIAL PROJECTS - UNDERGRADUATE

Offered for variable credit.

Staff

Offered every year

299.9 INTERNSHIPS - UNDERGRADUATE

Offered for variable credit.

Staff

Offered every year

308 PSYCHOLOGICAL PRINCIPLES APPLIED TO EDUCATION AND TEACHING/ Lecture, Discussion

An analysis of a number of major psychological theories is made. Each model is then applied to educational issues of particular relevance to the students. Assignments also focus on succinct applications to educational themes. Considers such theorists as Freud, Skinner, Piaget, R. White, Rogers, and Wertheimer.
Mr. Zern

Offered every year

345 RESEARCH AND EVALUATION IN EDUCATION PROGRAMS/ Lecture, Discussion

Explores the multiple roles of research and evaluation in developing and improving educational programs, emphasizing the effective use and design of needs assessment, policy research, program implementation research, and impact evaluation. Members develop a research design for their own professional setting.
Ms. Kenney

Offered periodically

351 EDUCATIONAL INSTITUTIONS AND SOCIAL SYSTEMS/ Lecture, Discussion

This course focuses on those aspects of sociological research and theory that are directly related to an understanding of educational institutions. In particular, the place of the educational system within the total society and the nature of a school as a society itself are considered.

Staff

Offered periodically

352 LEGAL AND POLITICAL DIMENSIONS OF THE ORGANIZATIONAL ENVIRONMENT/ Lecture, Discussion

Focuses on educational institutions as legal and political units, with particular reference to the interface between the educational institution and the various levels of government. The increasing involvement of the schools with the legal process is examined in a variety of contexts.

Staff

Offered periodically

366 SEMINAR IN COLLEGE CURRICULUM DESIGN

Refer to course description under Geography 366.

Mr. Knos

371 THESIS RESEARCH

Individual advisement on doctoral dissertation. Students meet with members of their Dissertation Committee for assistance with their dissertation study. Advising conferences are scheduled as needed by the individual student with committee members. The chair of the Dissertation Committee coordinates the advising process.

Staff

Offered every year

374 MANAGING EDUCATION AND PUBLIC SECTOR INSTITUTIONS/ Lecture, Discussion

This course focuses on the application of organizational theory to educational institutions and public organizations. Institutions are studied in terms of the structures, processes, and leadership that influence their actions in a variety of resource environments.

Mr. Bagshaw

Offered every year

380 DEPARTMENTAL MASTER'S SEMINAR/ Presentations, Discussion

Designed for master's degree candidates who are not writing a thesis. Requires a major analytic paper on a significant educational problem or issue which may

include an empirical or practical component. Students meet individually and in small groups to develop a topic focus and to discuss relevant research and professional literature.

Ms. Kenney, Staff

Offered every year

382 FOUNDATIONS OF SPECIAL EDUCATION/ Seminar

In this graduate level course, a sociological perspective on special education guides discussion of core topics such as deviance, labeling, mainstreaming, punishment, and testing. The works of Binet, Galton, and Itard, as well as those of contemporary educators and psychologists, are reviewed.

Staff

Offered periodically

383 HUMANITIES SEMINAR: LEARNING AND KNOWING/ Lecture, Discussion

An interdisciplinary study of the variety of ways we learn and know. The focus is a consideration of the various and often conflicting views of the ideal of the educated person.

Mr. Overvold

Offered every year

384 RESEARCH SEMINAR I

This two-semester course is designed to enable the student to explore the theoretical bases of empirical research. It is intended to lead to the formulation of a dissertation topic. The results of the year's experience is reported in a formal analytic paper. A full-year course.

Ms. Kenney, Mr. Zern

Offered every year

385 RESEARCH SEMINAR II

This two-semester course serves as a means for students to develop and discuss their ongoing dissertation research with faculty and other students. It is intended to lead to the formulation of a dissertation research proposal.

Staff

Offered every year

387 LEADERSHIP STRATEGY AND ORGANIZATIONAL CHANGE/ Lecture, Discussion

Focuses on the exercise of effective leadership and the development of strategies for realizing organizational and professional goals in varied business, educational, and community service contexts.

Mr. Bagshaw

Offered every year

391 QUANTITATIVE MEASUREMENT AND ANALYSIS I/ Lecture, Seminar

Introduction to measurement theory and basic statistics. Topics covered include measurement scales, instrument development, reliability, and validity; descriptive statistics; correlational analysis. Practical experience in development of an instrument, collection of data, validity and reliability analysis using SPSS computer programs.

Staff

Offered every year

392 QUANTITATIVE MEASUREMENT AND ANALYSIS II/ Lecture, Seminar

Statistical hypothesis testing, including chi-square tests, t-tests, tests of correlations, multiple regression, ANOVA, and ANCOVA. Practical experience in formulating and testing hypotheses using a real data set and SPSS computer analyses and in interpreting and reporting statistical results.

Staff

Offered every year

399.1 DIRECTED READINGS - GRADUATE

Offered for variable credit.

Staff

Offered every year

399.2 DIRECTED RESEARCH - GRADUATE

Offered for variable credit.

Staff

Offered every year

399.4 FIELD PROJECTS - GRADUATE

Offered for variable credit.

Staff

Offered every year

399.5 SPECIAL PROJECTS - GRADUATE

Offered for variable credit.

Staff

Offered every year

399.9 INTERNSHIPS - GRADUATE

Offered for variable credit.

Staff

Offered every year

English

DEPARTMENT FACULTY

Virginia M. Vaughan, Ph.D., *chair*: Shakespeare, Renaissance drama, Renaissance poetry and prose

James F. Beard Jr., Ph.D., *director of graduate studies*: American literature, American studies, American fiction, twentieth-century American fiction and drama

Charles S. Blinderman, Ph.D.: science and literature, Victorian literature, communications

John J. Conron, Ph.D.: American literature, American studies, American landscape

James P. Elliott, Ph.D.: American literature, literature and film, contemporary narratives; editing

SunHee Kim Gertz, Ph.D.: Chaucer, medieval literature, literary theory

Serena S. Hilsinger, Ph.D.: modernist literature, women writers

Leone Scanlon, Ph.D., *director of writing center*: composition

Maren E. Stange, Ph.D.: communications, American studies

Stanley Sultan, Ph.D.: modernist literature, literary theory, Anglo-Irish literature

Roberta E. Tovey, Ph.D.: Restoration and eighteenth century, novel

EMERITI

Karl O.E. Anderson, Ph.D.

William H. Carter Jr., Ph.D.

Jessie C. Cunningham, Ph.D.

UNDERGRADUATE PROGRAM

The English Department's program is designed to meet the needs and interests of nonmajors as well as majors. It aims to assist all students in developing skills in close reading, critical thinking, and effective writing, as well as in acquiring knowledge and experience valuable in any vocation. Instructors offer a spectrum of approaches to literary study ranging from linguistic and textual analysis to interpretations that complement other disciplines, such as film, painting, philosophy, psychology, science, management, comparative literature, and history.

The program encourages the development of a sense of cultural history, a sensitivity to literary values, and a firsthand knowledge of important authors, works, and periods of literature in English. The prospective English major chooses at first among elective courses, gradually focusing on the study of some particular period, theme, or activity appropriate to the student's interests. *Introduction to Literature and Composition* (English 20), an elective, is particularly recommended for freshmen because it combines training in close reading with critical thinking and writing. *Expository Writing* (English 18), also an elective, is especially valuable for students wishing to concentrate on their writing. During the freshman year, the prospective English major may wish to take or to begin a two-semester historical sequence. These include *Major American Writers* (English 169-170), *English Poetry* (English 110-111), *English Fiction* (English 131-132), *English Drama* (English 122-123), and *Fiction by Women Writers* (English 133-134).

In the sophomore year, majors normally continue their work in a historical overview. Also during this year, the major selects—in consultation with an adviser and other appropriate members of the staff—a suitable area of concentration. The “concentration” part of the English major is an integrated structure permitting each student to choose from a wide variety of recommended courses, inside and outside the English Department, that are related to the particular periods, themes, or activities appropriate to the student's special interests. A major concentrating in literary criticism and aesthetics, for example, might achieve this integration by taking relevant courses in comparative literature, linguistics, philosophy, intellectual history, psychology, and in arts other than literature. Other suggested areas of concentration include: literature of the Renaissance, American literature, American studies, literature and the teaching of English, literature and business, literature and science, literature and the performing arts, twentieth-century literature, women's studies, and writing (including journalism). Students wishing a double major may make the second major the basis for their concentration, or they may—with the approval of their advisers and the department—evolve their own concentrations in student-designed majors. Since the value of the concentration will depend, to a considerable extent, on the confluence of studies from a variety of disciplines, the importance of regular consultation with advisers in the selection of courses cannot be overstressed.

The basic program for all English majors may be summarized as follows. It should be noted that some courses fulfill more than one requirement and that some courses, by arrangement through the Worcester Consortium colleges, may be taken at Assumption College and the College of the Holy Cross.

SUMMARY PROGRAM FOR ENGLISH MAJORS

Nonrequired Preparatory Courses:

- 18 *Expository Writing*
- 19 *Intermediate Composition*
- 20 *Introduction to Literature and Composition*

General Requirements:

- A. One course on poetry: 110, *English Poetry I* or 112, *American Poetry*
- B. Two of the following four historical sequences:
 - 1. 169-170, *Major American Writers*
 - 2. 111, *English Poetry II*
 - 3. 131 and 132, *English Fiction*; or 133, *Fiction by Women Writers* and 134, *Modern Fiction by Women Writers*
 - 4. 122 and 123, *English Drama*
- C. One 200-level seminar in criticism from the following:
264, *American Literary Renaissance*; 240, *Varieties of Literary Criticism*; 241, *Mythopoetic Mode*; 237, *Studies in Narrative Form*; 340, *Introduction to Graduate Study in English*

D. Area Requirements:

To help majors develop greater historical perspective and awareness of the range and variety of English and American literature, all majors must take at least:

1. Two full courses or seminars dealing with English literature written before 1700. (One of these courses may be 100-level, i.e.: 120, *Introduction to Shakespeare*; 111, *English Poetry II*; or 122, *English Drama I* or 150, *Medieval Literature*.)

The 200-level courses fulfilling this requirement include:

250, *Medieval Literature*;

251, *Chaucer*;

253-254, *Advanced Shakespeare*;

255, *Studies in the Renaissance*;

256, *Milton and the Restoration Drama*.

2. Two full courses or seminars dealing with English or American literature written between 1700 and 1900. (One of these courses may be 100-level, i.e.: 133, *Fiction by Women Writers*; 169 or 170, *Major American Writers*; 131 or 132, *English Fiction*; or 123, *English Drama II*.) The 200-level courses fulfilling this requirement include: 261, *Jane Austen*; 263, *British Romantic Literature*; 264, *American Literary Renaissance*; 280, *American Culture and Society, 1820-1860*; 265, *Victorian Literature*; 266, *Romantic and Victorian Gothic*; 267, *Darwinism*; 269, *American Realism*; 283, *The American Landscape*.

- E. Every major's program must include at least four full-semester courses at the 200-level in English in addition to the required seminar designed to suggest or demonstrate different means of achieving critical synthesis.

HONORS PROGRAM

A student who wishes to take honors in English should choose a topic and an adviser and apply to the department chair before the end of the junior year. See English 297, *Honors in English*, for details.

DIRECTED RESEARCH OPPORTUNITIES

During their junior and senior years, English majors are encouraged to experience professional literary scholarship by engaging in research with a professor of the student's choice. The research may take several forms: It may be funded by a grant; it may be undertaken for course credit; or it may be in the form of a special project. Past research projects have included work on the scholarly editions of James Fenimore Cooper's texts, investigation of the theater history of *The Tempest* and *Othello*, review of commentaries on classic twentieth-century drama, and studies in Darwinism. Students should identify an area of interest and contact their advisers to see if such work is desirable for their concentrations.

INTERNSHIP OPPORTUNITIES

In cooperation with the University's Internship Office, the English Department administers a program of internships for juniors and seniors. Internships are available both in University offices and in the city—in newspapers, news departments of radio and television stations, periodical and book publishers, and communications departments. Internships can in most cases be integrated into the student's chosen concentration.

GRADUATE PROGRAM

The University offers a program leading to the master of arts degree in English. A limited number of scholarships providing tuition remission are available for

superior students. The department also offers several teaching assistantships, involving half-time teaching and half-time study, with stipends ranging up to \$5,200, plus the remission of tuition. For the master of arts, the student must complete satisfactorily at least eight full upper-level courses or seminars, including 340, *Introduction to Graduate Study*; and 396, *Thesis Workshop*. In addition to completion of the master's thesis (English 397), the student must pass a final oral examination. Some teaching experience at Clark, or such other teaching as the department may regard as equivalent, is prerequisite to the master's degree.

COURSES

INTRODUCTORY COURSE

20 INTRODUCTION TO LITERATURE AND COMPOSITION/ Discussion

This course provides the student with an opportunity for intensive reading and writing about basic elements of poetry, fiction, and drama. Small sections and limited reading lists help establish an atmosphere conducive to significant class discussion; emphasis is placed on writing effectively about literature. Strongly recommended for prospective English majors. No student may take more than one section of English 20.

Staff

Offered every year

WRITING COURSES

15 BASIC WRITING/ Workshop

Designed to prepare students to do college level writing, the course is required of some students on the basis of placement screening. Through frequent writing and rewriting the course works to develop fluency, organizational and editing skills, and mastery of basic sentence structure.

Staff

Offered every year

16 CREATIVE WRITING: FICTION/ Workshop

This is a course designed to cultivate and guide student work chiefly in the short story, but students may also work with the lyric poem and the informal essay. Class meetings deal largely with important aspects of the art of fiction; published literary works and student manuscripts are discussed. Not open to freshmen. Prerequisite: one semester of literature taught in any department. Graded only on a credit/no record basis.

Staff

Offered periodically

17 CREATIVE WRITING: POETRY/ Workshop

This course is open to students who have taken English 16 and to students mainly interested in writing verse. Prerequisite: one semester of literature taught in any department. Not open to freshmen. Graded only on a credit/no record basis.

Staff

Offered periodically

18 EXPOSITORY WRITING/ Workshop

For this course we will define writing as thinking through language—a way of discovering and exploring thought and a way of communicating it to an audience. Centered on student writing, the course seeks to enable students to enact this process of exploring and learning as well as to prepare written products, including a short investigative paper, appropriate to a range of rhetorical situations.

Staff

Offered every semester

19 INTERMEDIATE COMPOSITION/ Workshop

This course is designed to help those who have acquired competence in nonfiction prose to improve their style and rhetorical effectiveness through extensive practice. Among the methods used may be keeping a journal, reading one's writing aloud, and studying the work of published essayists. Each student's writing will be read both by the instructor and by other students. Workshop classes will require active participation. Permission of the instructor required.

Ms. Scanlon

Offered every year

100 WRITING FOR MAGAZINES/ Workshop, Lecture

This course is designed to help students develop appropriate styles for submission of expository articles to magazines and newspapers. Writing assignments are heavy; reading is in contemporary periodicals. There are occasional guest speakers. Prerequisite: permission of instructor.

Ms. Tovey

Offered every year

101 ADVANCED CREATIVE WRITING/ Workshop

This course requires admission by permission of instructor, who will require a sample of the student's work. Enrollment is limited to ten students. Like most of our other writing courses, English 101 is graded on a credit/no record basis.

Staff, Writer-in-Residence

Offered periodically

102 DOCUMENTARY WRITING

This course, designed especially for Communications concentrators, emphasizes writing skills important in communications fields. Course work offers practice in composing effective documentary texts that incorporate narrative, exposition, dramatization, captions and interviews. Students' projects in several media are presented in class. Not open to freshmen. Limit: fifteen students.

Ms. Stange

Offered every other year

103 LITERARY RESEARCH AND WRITING

This course gives the student instruction in word processing as well as in methods of writing professional research papers in expository prose. The entire semester is spent on the production of one longer paper that is to meet a requirement for another course which the student is taking concurrently. Meets the *verbal expression* requirement.

Ms. Gertz

Offered every year

LITERATURE COURSES

POETRY

110 ENGLISH POETRY I/ Lecture, Discussion

The sequence 110-111 focuses on the development of the most important forms, themes, and movements in English poetry. This course, required for the English major, emphasizes intensive study and discussion of individual poems. It includes a series of essays on assigned topics and fulfills the *verbal expression* requirement.

Ms. Hilsinger, Mr. Sultan

Offered every year

111 ENGLISH POETRY II/ Lecture, Discussion

This is the sequel to English Poetry I. Poetry by Stevens, Dickinson, Wordsworth, Pope, Milton, and a group of Renaissance lyric poets is studied in that sequence (reverse chronology).

Mr. Sultan

Offered every year

112 AMERICAN POETRY/ Discussion

A study of selected American poets in light of a common theme or poetic form, this course is designed to introduce students to the close reading of poetry and to the question of its relation to American culture. In 1987, the theme is "The Poet in a Landscape" and the poets to be studied include Walt Whitman, Emily Dickinson, Robert Frost, William Carlos Williams, Theodore Roethke, and Adrienne Rich.

Mr. Conron

Offered every other year

DRAMA

120 INTRODUCTION TO SHAKESPEARE/ Lecture

Designed for any student who wants an introduction to Shakespeare, this course studies several major plays in detail, stressing interaction of plot and character while relating each play to common human situations and moral dilemmas. Particular attention is paid to *values*, what they are and how the characters deal with them. At least six plays will be read, including one major tragedy. Prerequisite: verbal skills course or permission of the instructor.

Ms. Vaughan, Ms. Gertz

Offered every year

122 ENGLISH DRAMA I/ Lecture

This course is the first half of a survey of drama and its historical and social context in the English-speaking countries. It covers the medieval theater and the drama of Renaissance England to the closing of the theater in 1642 by the Puritan republic. No prerequisite.

Ms. Vaughan

Offered every other year

123 ENGLISH DRAMA II/ Lecture

This course is the second half of a survey of drama in its historical and social context in the English-speaking countries. It covers the three centuries from the restoration of the English monarchy and the reopening of theaters in 1660 to the 1970s. No prerequisite.

Mr. Sultan

Offered every other year

NARRATIVE

130 THE SHORT STORY/ Lecture

This course involves intensive reading of stories that exemplify a variety of fictional methods and affords the student some knowledge of the history of this literary type. The primary aim is to help the student develop an appreciation of the relationship between the methods and the broadly human values implicit in the short story. Prerequisite: verbal skills course or permission of instructor.

Mr. Elliott

Offered every year

131 ENGLISH FICTION/ Lecture

The sequence 131-132 is an exploration of British narrative and fictive modes from the eighteenth century to the present. In this course, texts include *Roxana*, *Tom Jones*, *Tristram Shandy*, and *Pride and Prejudice*. Close attention is paid to both texts and their intellectual contexts.

Ms. Tovey

Offered every other year

132 ENGLISH FICTION/ Lecture

This course continues the exploration of British narrative and fictive modes.

Writers studied include Bronte, Dickens, Lewis Carroll and Hardy. Close attention is paid to both texts and their intellectual contexts.

Ms. Tovey Offered every other year

133 FICTION BY WOMEN WRITERS, 1688-1899/ Lecture

Authors read include Behn, Burney, Austen, Bronte, Eliot, Gilman, Chopin. The emphasis in this course is upon these women authors' and their characters' reactions to, and interactions with, the atmospheres and landscapes of their respective ages. Prerequisite: Verbal skills course or permission of instructor.

Ms. Hilsinger Offered every other year

134 MODERN FICTION BY WOMEN WRITERS/ Lecture

The selection of authors and works is based on three major concerns: that the literature read represent a chronological span, that it preserve a certain thematic coherence, and that it allow ample opportunity for discussion of aesthetic matters. The course is concerned with works written in the twentieth century that provide portraits of women in all stages and conditions of life rendered in a broad spectrum of fictional techniques. Authors studied include Gertrude Stein, Djuna Barnes, Katherine Mansfield, Virginia Woolf, Katherine Ann Porter, Zora Neale Hurston, and Iris Murdoch. Prerequisite: Verbal skills course or permission of instructor.

Ms. Hilsinger Offered every other year

135 MODERN AMERICAN FICTION/ Lecture, Discussion

This is a critical introduction to the best American fiction from about 1900 to 1960, with emphasis on its aesthetic values, sociological insights, and philosophical implications. Authors read include Dreiser, Anderson, Fitzgerald, Hemingway, Capote, Faulkner, Ellison, Mailer, and others.

Mr. Beard Offered every year

136 CONTEMPORARY COMPARATIVE NARRATIVES/ Lecture

This is a study of representative contemporary fiction written between approximately 1960 and the present. Comparisons among American, British, and European writers such as Percy, Lessing, Kundera, Boll, Duras, Gardner, and Calvino focus on their depictions of the role of fiction-making in contemporary society. Emphasis is also on the students' ability to make such comparisons. Prerequisite: verbal skills course or permission of instructor.

Mr. Elliott Offered every year

237 STUDIES IN NARRATIVE FORM: CLUSTER COURSE

This course explores narrative both structurally and historically with an emphasis on literary fiction as a particular kind of narrative form. We follow the evolution of narrative in Western literature through the aesthetics of realism and modernism as they have been elaborated in fiction and in critical theory. The relevance of nonliterary narrative to the understanding of fiction is also discussed. Texts include both novels and films.

Mr. Conron, Mr. D'Lugo Offered periodically

CRITICISM

240 VARIETIES OF LITERARY CRITICISM/ Seminar

Using a small number of model literary works, this course explores the theory and practice of alternative critical perspectives and schools of criticism. Prerequisite: permission of instructor.

Mr. Sultan Offered every other year

241 THE MYTHOPOETIC MODE/ Seminar

This course explores the vision and epistemology of mythopoetic literature. Works read and discussed include Shakespeare's *Henriad*, Milton's *Paradise Lost*, Brontë's *Wuthering Heights*, Melville's *Moby Dick*, and a work of the modern period. Candidates for honors in English are encouraged to elect either this seminar or English 240 in their junior year. Prerequisite: permission of instructor.
Ms. Hilsinger

Offered every year

340 INTRODUCTION TO GRADUATE STUDY IN ENGLISH/ Seminar

This course examines certain fundamental aspects of literary theory and considers the nature of and relationships among the three principal areas in the discipline—bibliography and textual analysis, literary history, and literary criticism. M.A. candidates not specifically exempted are required to take this course.

Mr. Sultan

Offered every fall semester

PERIOD COURSES

MEDIEVAL AND RENAISSANCE

150 MEDIEVAL LITERATURE

This course traces the influences and the impact of medieval literature in the literary continuum of Western culture, examining classical roots and contemporary counterparts. The course concentrates on a different theme each year, to be drawn from the following repertoire: Rhetoric and Romance in Medieval Literature; Narratology; The Shrinking Stage in Western Literature; The Epic Hero and the Lady Lover; Vergil in the Middle Ages; and Ovid in the Middle Ages. Students may take the course more than once provided they study a different theme each time.

Ms. Gertz

Offered every year

250 MEDIEVAL LITERATURE/ Seminar

This course emphasizes literary theory as well as literature of the Middle Ages. The course concentrates on Middle English texts, though important classical and continental literature also is read to enhance the student's appreciation of the period. Texts will vary each time the course is offered.

Ms. Gertz

Offered every other year

251 CHAUCER/ Seminar

This course guides the student through *The Book of the Dutchess*, *The House of Fame*, *The Parlement of Fowls*, some *Canterbury Tales*, and *Troilus and Criseyde*.

Ms. Gertz

Offered every other year

253-254 ADVANCED SHAKESPEARE/ Seminar

The sequence 253-254 constitutes a yearlong course in Shakespearean drama. Approximately twenty plays are read in a close examination of Shakespeare's development as a dramatist. This sequence also introduces students to recent developments in Shakespearean criticism and research techniques. Semester one covers Shakespeare's early plays, the histories and the mature comedies, ending with *Hamlet*. Semester two emphasizes the later tragedies and the romances. 253 is a prerequisite for 254. Open only to junior/senior English majors and students who have completed English 120 successfully.

Ms. Vaughan

Offered every year

255 STUDIES IN THE RENAISSANCE/ Seminar

This course explores the poets, playwrights, and prose writers who shaped the

English literary Renaissance. Authors to be studied may include Thomas More, Philip Sidney, Edmund Spenser, John Donne, William Shakespeare, George Herbert, Ben Jonson, Andrew Marvell, Robert Herrick, John Milton, Thomas Browne, and John Dryden. Their writings are placed in the socio-political context of the sixteenth and seventeenth centuries. Permission of the instructor required.

Ms. Vaughan, Ms. Tovey

Offered periodically

256 MILTON AND THE RESTORATION DRAMA/ Seminar

This is an intensive reading of Milton's poems and selected Restoration plays by Wycherley, Etherege, Dryden, Congreve and others. Prerequisite: permission of the instructor.

Ms. Tovey

Offered periodically

EIGHTEENTH AND NINETEENTH CENTURIES

167 LITERATURE AND SCIENCE/ Lecture, Discussion

This course traces the impact of scientific discovery upon literature and the literary accomplishments of scientists. The course is thus a study both in the history of ideas and in literary style. Student research is encouraged.

Mr. Blinderman

Offered periodically

169 MAJOR AMERICAN WRITERS/ Lecture, Discussion

The sequence 169-170 takes an historical approach to American literature from Puritanism to the present. This part of the sequence concentrates on early American literature, 1630-c.1855. Texts by Taylor, Edwards, Franklin, Cooper, Emerson, Thoreau, Poe, Hawthorne, Melville and others are read closely.

Mr. Conron

Offered every year

170 MAJOR AMERICAN WRITERS/ Lecture, Discussion

This part of the sequence 169-170 concentrates on the evolution of American literature from c.1855 to the present. Texts by Whitman, Twain, Howells, Dickinson, Jewett, Crane, James, Frost, Eliot, Faulkner, and Hemingway are read closely.

Mr. Beard

Offered every year

261 JANE AUSTEN/ Seminar

This is a close study of Jane Austen in the context of the literary and social concerns of the late eighteenth- and early nineteenth-centuries. The bulk of the reading is in Austen: Texts include all of the mature novels, as well as the unfinished works and selections from the *Juvenilia*. The course also addresses writers whose works inform and influence Austen, such as Burney, Radcliffe, Johnson, and Cowper. Prerequisite: permission of the instructor.

Ms. Tovey

Offered periodically

263 BRITISH ROMANTIC LITERATURE/ Seminar

This course examines its subject from different perspectives— philosophical, biographical, and critical. To uncover what the Romantic sensibility is—how it relates to nature, love, revolution—we study selected works of the major Romantic authors: Burns, Blake, Wordsworth, Coleridge, Shelley, and especially Keats and Byron.

Mr. Blinderman

Offered every other year

264 AMERICAN LITERARY RENAISSANCE/ Seminar

Characteristic writings by Emerson, Thoreau, Hawthorne, Poe, Melville, and Whitman are examined and juxtaposed dialectically to explore the uniqueness

of their individual and collective accomplishments and their larger implications in the context of American culture. Field trip to Concord and possibly elsewhere.

Prerequisite: permission of instructor.

Mr. Beard

Offered every year

265 VICTORIAN LITERATURE/ Seminar

Although literary works are examined critically, the seminar focuses upon the ways in which these works define issues—such as evangelical ethics, subversive science, social reform, pre-Raphaelite painting, and decadence—of concern to Victorians and to us.

Mr. Blinderman

Offered every other year

266 ROMANTIC AND VICTORIAN GOTHIC/ Seminar

This seminar calls forth the Gothic spirit from its residence in graveyards. It is designed to introduce students to Frankenstein's monster, Heathcliff, Dracula, transvestites, and other aberrations infesting Gothic poetry and prose from the mid-eighteenth century to the present. Films and a field trip are included.

Mr. Blinderman

Offered every other year

267 DARWINISM/ Seminar

Interdisciplinary in nature, this course is devoted to the study of original and research materials elucidating the scientific, philosophical, religious, and social dimensions of Darwinism. The course examines chiefly Darwinian ideas about the survival of the fittest in English and American literature. Prerequisite: permission of instructor.

Mr. Blinderman

Offered every other year

269 AMERICAN REALISM/ Seminar

This course explores the artistic assumptions underlying American realism through selected works of America's best-known realists, as selected from Twain, Howells, James, Crane, Norris, and Dreiser. We also pay some attention to the development of each writer by reading samples of his early and later work. Prerequisite: permission of instructor.

Mr. Elliott

Offered every year

TWENTIETH CENTURY

271 HARDY AND LAWRENCE/ Seminar

A concentration on the novels of Thomas Hardy and D.H. Lawrence. The two writers have affinities both personal and ideological. Taken together, their works span the late nineteenth and early twentieth centuries and so offer contrasting perspectives on an important transitional period. Hardy writes at the end of the Victorian era, Lawrence at the beginning of the modern. Hardy looks back, Lawrence forward; Hardy's stance is social and nostalgic, Lawrence's psychological and apocalyptic. Each illuminates the other and each reflects the intellectual currents of the time. Readings include the major novels of each author and selections from essays and letters. Prerequisite: permission of instructor.

Ms. Tovey

Offered periodically

272 SEMINAR: LAWRENCE AND JOYCE

An intensive introduction to the art of the two writers. Poems, short stories, and novels by both are studied. Prerequisite: permission of instructor.

Mr. Sultan

Offered periodically

272 SEMINAR: LAWRENCE AND JOYCE

An intensive introduction to the art of the two writers. Poems, short stories, and novels by both are studied. Prerequisite: permission of instructor.

Mr. Sultan

Offered periodically

273 THE IRISH LITERARY MOVEMENT/ Seminar

A course in the inception, development, and effect of the literary movement during the end of the last century and the first decades of this one that created an Irish literature in English. Writers studied include Yeats, Joyce, Synge, and O'Casey. The cultural, historical, and political backgrounds of Anglo-Irish literature are also studied. Prerequisite: permission of instructor.

Mr. Sultan •

Offered periodically

274 W.B. YEATS/ Seminar

An intensive study of the accomplishment of Yeats. The principal concern is his poetry, but attention is given to his thought, his dramatic and other writings, and his cultural role in Ireland and the world during his time. Prerequisite: permission of the instructor, or one of the following: *English Poetry*, *The Irish Literary Movement*, *T.S. Eliot*.

Mr. Sultan

Offered periodically

275 SEMINAR: THE MAJOR WORKS OF VIRGINIA WOOLF AND T.S. ELIOT

This seminar is devoted to an examination of the major works of Virginia Woolf and T.S. Eliot. Seminar reading and discussion focus on a comparative study of the following works: "The Love Song of J. Alfred Prufrock" and *A Haunted House*; *The Waste Land* and *Jacob's Room*; *To the Lighthouse* and *Ash-Wednesday*, *The Waves* and *Four Quartets*; *Between the Acts* and *Murder in the Cathedral*. Prerequisite: permission of the instructor.

Ms. Hilsinger

Offered every other year

267 SPECIAL STUDIES IN TWENTIETH-CENTURY AMERICAN LITERATURE: HEMINGWAY AND FAULKNER/ Seminar

Devoted to the intensive study of a twentieth-century writer or small group of writers. Prerequisite: permission of instructor.

Mr. Beard

Offered every other year

277 EUGENE O'NEILL/ Seminar

An intensive study of about twenty of O'Neill's plays, from the early one-acters to *The Iceman Cometh*, *Long Day's Journey into Night*, and *A Moon for the Misbegotten*, with some attention to ideas, persons, and theatrical movements affecting O'Neill. Prerequisite: permission of instructor.

Mr. Beard

Offered periodically

278 F. SCOTT FITZGERALD AND THE TWENTIES/ Seminar

American literature experienced a rebirth in the 1920s. Using F. Scott Fitzgerald's writings as convenient points of reference, the seminar examines, with particular attention to experiments in expression, works by such writers as Gertrude Stein, E.E. Cummings, T.S. Eliot, Sherwood Anderson, Ernest Hemingway, Sinclair Lewis, William Faulkner, Eugene O'Neill, William Carlos Williams, and Wallace Stevens. Interrelationships among the arts significant in the development of new forms and modes of expression are stressed. Prerequisite: permission of instructor.

Mr. Beard

Offered periodically

INTERDISCIPLINARY COURSES AMERICAN STUDIES

280 AMERICAN CULTURE AND SOCIETY, 1820-1860/ Discussion

This course is an interdisciplinary study of the emergence of America as a nation and as a culture. The course concentrates on the conflict between the ideals of individualism, nature, and community and the realities of changing social conditions. Attention is paid to some significant patterns of Jacksonian thought and politics, to cultural geography, and to the arts (literature, painting, and architecture). There are several field trips. Enrollment limited to twenty students.

Mr. Conron, Ms. Stange

Offered every year

281 AMERICA SINCE 1860/ Discussion

This course is an interdisciplinary study of the American city since 1860. Cultural patterns and themes studied include the interrelation of ideals of community and changing social organization and the role of some ideas (Darwinism, realist and modernist aesthetics) in perceptions of the city. The course includes perspectives of historians, geographers, sociologists, and artists (primarily in literature, painting, film, and photography). Enrollment limited to twenty students.

Mr. Conron, Ms. Stange

Offered every year

282 THE ARTS IN MODERN CULTURE

Writers studied in this course analyze the arts culturally and politically as well as aesthetically and historically. Acknowledging that the advent of industrial society and mass communications has altered the nature and functions of fine and popular arts just as it has changed other aspects of life, they extend their concerns beyond the traditional "high arts" to films, photography, television, advertising and popular culture. Writers may include Berger, Benjamin, Barthes, Sontag and Jameson.

Ms. Stange

Offered every year

283 THE AMERICAN LANDSCAPE/ Discussion

This interdisciplinary course on the American landscape concentrates on the perceptions of both travelers and inhabitants. Its historical range, from the sixteenth to the twentieth century, allows considerations of several major stages in the history of these perceptions. Texts include paintings, photographs and films as well as prose narratives. The course is sometimes taught as part of a cluster of courses in Geography (Professor Johnson) and Art (Professor Grad). Limited to twenty students. Permission of instructor required.

Mr. Conron

Offered every year

284 EUROPEAN ROOTS OF AMERICAN SPACE: THE CROSS-ATLANTIC EXPERIENCE/ Seminar

This course examines the European images of the known world at the time of the discovery of America and inquires how these early notions affected later thought about America in the areas of the arts, geography, and philosophy. With the use of literature, film, and other artistic forms, specific spatial constructs are studied in a variety of contexts: the island, the city, the garden, the frontier, the general contrast between primitive and civilized spaces. Enrollment is limited to fifteen students.

Mr. Conron

Offered periodically

285 THE END OF AMERICA: LOS ANGELES

The modern city reflects the values and forces which have shaped Western culture in its westward course. In the last century the history of Los Angeles—the western end of American space—embodies better than that of any other city the polemic

between traditional and technological notions of the modern city. It provides a unique, possibly the ultimate, model for the examination of the American cultural spirit, perhaps even of the end of that spirit. This cluster course is designed to explore the changing notions of the city and the American attitude toward the culture of cities through close examination of the history, geography, literature, and film associated with Los Angeles.

Mr. Conron

Offered periodically

COMPARATIVE LITERATURE

A student may count any of the courses listed under Comparative Literature toward the English major. In all cases, such electives must be approved by the student's adviser in the English Department as being meaningfully related to the student's overall program of English studies. The 200-level courses of the Comparative Literature Program such as Comparative Literature 230, 240, and 251 are especially recommended.

LANGUAGE AND COMMUNICATIONS

190 PRINCIPLES OF COMMUNICATIONS/ Lecture, Discussion

An introduction to the communications concentration. This course provides an elementary but comprehensive survey that may be pursued in greater depth in subsequent courses. Students explore both the theory and practice of communication in all its major aspects: visual communications, oral and written language, and performance.

Ms. Stange

Offered every year

192 ETYMOLOGY/ Lecture, Discussion

This course increases students' vocabularies through a study of the history of the English language—from its Indo-European source to contemporary slang additions.

Mr. Blinderman

Offered periodically

193 THE LANGUAGE OF BIOLOGY/ Lecture, Discussion

In this course students study Latin and Greek roots and affixes that constitute biological terms in disciplines such as paleontology, taxonomy, and medicine.

Mr. Blinderman

Offered periodically

294 HISTORY OF THE ENGLISH LANGUAGE/ Lecture, Discussion

Focusing on the English language from a historical perspective, this course examines the changes in English during the Anglo-Saxon, medieval and early modern periods. In addition to learning phonological and grammatical characteristics of each period, the student examines language as a mirror of culture.

Ms. Gertz

Offered every other year

INDEPENDENT PROJECTS

295 DIRECTED READINGS

Offered for variable credit.

Staff

296 SPECIAL PROJECTS

Offered for variable credit. Staff Note: When asking an instructor to sponsor

Directed Readings (295) or a Special Project (296), the student should: (1) demonstrate competence to deal with the materials as literature and (2) present a well-thought-out proposal. The student must take the initiative in selecting readings or carrying out the special project.

297 HONORS IN ENGLISH: SENIOR YEAR

A student who plans to take Honors in English should choose a subject and an adviser and apply to the department chair before the end of junior year. At the student's discretion and with the adviser's approval, a student may register for an *Honors in English* project, which will carry one or two credits. If the project warrants two courses, credit for one semester's *Directed Reading* and one semester's *Directed Writing* can be arranged simultaneously or in sequence. The adviser and the student will agree on deadlines for the project's stages, but the department requires a first draft by the first Monday in April. A complete thesis is due one week before the last day of classes. A second reader, chosen by the student and the adviser, participates in the final evaluation. In no case will honors be granted to any student who fails to meet both deadlines (although the project still qualifies for course credit and a grade).

Staff

298 INTERNSHIP

Offered for variable credit.

395 GRADUATE DIRECTED READINGS

May be elected by students who want to pursue in depth a topic other than that chosen for the master's thesis. Prerequisite: permission of instructor and department chair or director of graduate studies.

Offered for variable credit.

Staff

396 THESIS WORKSHOP

Involves the doing—though not necessarily the completion—of a scholarly-critical project in literature on a professional level. The entire process from initial formulation to final presentation will be considered in the context of the specific individual projects of students in the group. A prerequisite is active commitment to and involvement in such a project.

Mr. Beard

Offered every year

397 MASTER'S THESIS

Prerequisite: permission of department chair or director of graduate studies.

Staff

Environment, Technology and Society

PROGRAM FACULTY

Christoph Hohenemser, Ph.D., *chair*: physics, technology assessment, risk analysis and hazard management

Halina Brown, Ph.D., *undergraduate adviser*: chemistry, biochemistry, toxicology, risk assessment

John A. Davies, Ph.D.: physics, energy analysis

Jacque L. Emel, Ph.D.: water resources, water resources planning and policy, hydrology
 Robert L. Goble, Ph.D.: physics, energy studies, atmospheric transport, risk analysis and management
 Frederick T. Greenaway, Ph.D.: chemistry, environmental analysis
 Roger E. Kasperson, Ph.D.: geography, environmental policy, decision making, risk analysis and management
 Todd P. Livdahl, Ph.D.: ecology, population biology
 Ortwin Renn, Ph.D.: technology assessment, risk analysis and management
 Harry E. Schwarz, B.C.E., P.E. *graduate adviser*: water resources engineering, water planning and policy, hydrology, environmental planning
 Don M. Shakow, Ph.D.: resource economics, regional development, energy analysis

PROGRAM

Environment, Technology and Society (ETS) is an interdisciplinary program which emphasizes policy questions involving the environment and the use and misuse of science and technology. The goal of the program is to produce individuals who are able to deal with technical issues in a social and political context and who do so with an acute awareness of the short- and long-range limitations of the natural environment. The ETS Program offers an undergraduate major and two master of arts degrees, in environmental affairs and in technology assessment and risk analysis. Participating faculty are drawn from a number of departments and disciplines and have research interests in a wide range of societal problems, including environmental science and management, energy and technology policy, and assessment and control of technological hazards. Faculty interests, which are focused on both the developed and developing world, offer students the chance to participate in research.

When it began in 1984-85, the ETS Program combined and enhanced long established programs in Science, Technology and Society and Environmental Affairs. Graduates of these programs have taken positions in private industry and government doing work that involved policy analysis and formulation, planning, risk analysis, and environmental impact assessment. Students have also gone on to other graduate fields or have pursued careers in professions such as medicine or law.

UNDERGRADUATE MAJOR

The degree requirements for an undergraduate ETS major are designed to ensure that students acquire a firm foundation in natural science with considerable exposure to social science/public policy perspectives. Achieving literacy in natural science is especially important for two reasons: (1) Many significant problems are accessible only with a thorough grounding in natural science and (2) there is a significant need for managers of science, technology, and environment whose technical background is more than perfunctory.

Accordingly, the requirements for the undergraduate ETS major are ten semesters of basic natural science and mathematics, two semesters of basic social science, six semesters of environment, technology and society, including a capstone project. Most of the required ETS courses are multidisciplinary and involve a significant component of social science and public policy. The eighteen-course major requirements are specified in the following table.

REQUIREMENTS FOR THE MAJOR

(a) Basic literacy in natural science

6 semesters in one discipline of natural science (physics, chemistry, biology, mathematics/computer science)

2 additional semesters of unspecified natural science
2 semesters of mathematics/computer science, one of which
must be calculus (2 semesters in an additional natural
science if 6 semesters of mathematics/computer science
are taken)

(b) Basic literacy in social science

2 semesters of basic social science (economics,
government, geography, management)

(c) ETS courses

1 introductory course

2 method and analysis courses

2 problem oriented courses

1 semester course equivalent of capstone research,
involving a thesis, a research project, or an
internship

All student programs must be specifically approved by the undergraduate adviser. In this connection, students should note that ETS courses crosslisted by natural and social science departments may not be used to meet the basic literacy requirements in natural and social science.

ETS majors are encouraged to strengthen their educational experience by working in academic year internships and/or paid summer jobs related to their goals and interests. These positions are often obtained with the advice and assistance of the program committee, whose members have contact with numerous organizations. Examples of placement in recent years include the Town of Holden Conservation Commission, the Massachusetts Energy Office, the Scientists' Institute for Public Information, the Central Massachusetts Regional Environmental Council, the Massport Office of Noise Control, the Central Massachusetts Air Pollution Control District, and the Massachusetts Office of Coastal Zone Management.

The ETS Program also seeks to facilitate the involvement of undergraduates in faculty research. Much of this research is housed in the University's Center for Technology, Environment and Development (CENTED); the remainder is located in participating departments. Detailed, up-to-date information on research opportunities is available from individual program committee members and from the program office.

Honors in environment, technology and society are awarded upon presentation and oral defense of an undergraduate thesis. Students who wish to receive honors must have attained at least a 3.0 grade point average in ETS-required courses by their junior year and are encouraged to begin work the following summer on a project or internship that can be extended into a thesis during the senior year.

INTEGRATED B.A./M.A. DEGREE

Because an undergraduate liberal arts education, even with an ETS major, leaves only a modest amount of time for intensive study of ETS subject matter, the program offers an integrated B.A./M.A. option involving a total of five years of study. Under this plan, students complete an undergraduate major in the first four years and an M.A. degree during the fifth.

Majors in any undergraduate field are acceptable for the M.A. degree. ETS majors are admitted to the B.A./M.A. program without additional requirements. Majors in other disciplines must supplement departmental requirements with a number of preparatory courses, as shown in the table below. The preparatory courses in most instances count as part of the "extended major" requirements of

various departments and thus are not difficult to satisfy. With approval of the graduate adviser, students in the combined B.A./M.A. program may count, toward the graduate requirement, any 200-level undergraduate courses completed with a grade of B- or better.

A request for admission to the combined B.A./M.A. program is normally made to the program chair during the junior year and will be granted if the student presents an acceptable program of undergraduate study and a cumulative average of B- or better. Students interested in this program are encouraged to take an ETS introductory course in the freshman or sophomore year.

UNDERGRADUATE REQUIREMENTS FOR B.A./M.A. STUDENTS WHO MAJOR IN STANDARD DISCIPLINES

(a) Major in natural science and mathematics/computer science

(b) Basic social science

1 semester of economics

1 semester of geography or government

(c) ETS courses

1 introductory course

2 methods and analysis courses

2 problem-oriented courses

TOTAL: Major + 7 courses

(a) Major in social science, including history

(b) Basic natural science

2 semester of biology

2 semesters of physics or chemistry

1 semester of calculus

1 semester of statistics

(c) ETS courses

1 introductory course

2 methods and analysis courses

2 problem-oriented courses

TOTAL: Major + 11 courses

(a) Major in humanities, excluding history

(b) Basic natural and social science

2 semesters of biology

2 semesters of chemistry or physics

1 semester of calculus

1 semester of statistics

1 semester of economics

1 semester of geography or government

(c) ETS courses

1 introductory course

2 methods and analysis courses

2 problem-oriented courses

TOTAL: Major + 13 courses

MASTER'S DEGREES

Two master of arts degrees are offered. The M.A. in environmental affairs trains students for entry level professional positions in the expanding fields of environmental planning, management, and education. The M.A. in technology assessment and risk analysis trains students in evaluating the benefits and hazards of technology and may lead to further graduate work or entry level positions in the fields of environmental and occupational health and safety.

Ten course units are normally required for each degree. Five of these units are usually earned in a classroom setting and three through a combination of research participation, internship, and teaching experience. The thesis or terminal project accounts for the remaining two. Either a research project or a teaching experience must be presented. An internship, although not required, is highly recommended. All graduate plans of study must be presented to and approved by the graduate adviser.

Students from other institutions or from Clark are admitted to the master's program upon application to the program office. Clark students who have been previously admitted to the integrated B.A./M.A. program, and who complete the requirements for this program, may count any two 200-level courses, internships, or research projects toward the ten-course requirements of the M.A. degree. These courses must have approval of the graduate adviser and must be completed with a B- or better. Students from other institutions may be given credit for two advanced courses if these would have met the requirements for Clark students.

Some financial aid in the form of tuition remission is available for qualified students.

INTRODUCTORY COURSES

101 INTRODUCTORY CASE STUDIES/ Lecture, Discussion

Introduces the student to technology assessment and environmental policy via a series of illustrative cases, drawn from population and food, land, and water resources, energy conservation, pollution control, and arms control. Both writing and quantitative methods are emphasized so that students will become aware of the multidisciplinary approach needed in analysis of the cases. An integrative paper or presentation plays a major role in the course.

Ms. Brown, Mr. Renn, Staff

Offered every semester

102 INTRODUCTION TO ENVIRONMENTAL MANAGEMENT/ Lecture, Discussion

Explores some of the basic concepts and problems involved in the study of natural resources and environmental management. This is accomplished by examining the physical principles, management practices, and environmental issues involved in three major cycles of the biosphere: the hydrologic, the carbon, and the nuclear fuel cycle. Solutions to major issues of waste disposal and resource development are examined from the perspective of economic, political, and ecologic theory.

Ms. Emel

Offered every year

103 ENVIRONMENT 198—/ Lecture, Discussion

An assessment of major environmental issues, both national and global in nature, confronting human society in the current year. Particular attention to problems requiring governmental action: rapid population growth, hazardous chemical wastes, long-term planning, world water shortages. The interplay between environmental change and public policy is stressed. Intended for those desiring introductory or general knowledge.

Mr. Kasperson

Offered every year

METHODS AND ANALYSIS COURSES

109 SCIENCE AND SOCIETY WRITING SEMINAR/ Seminar

This writing seminar is intended for students who are interested in how people interact with complex technologies or with complex natural systems, and who wish to develop skills in using nontechnical language to describe and analyze

technical subjects. Each year the seminar concentrates on a particular topic of current interest. Students write papers that—after integration and editing in the seminar—may be published as part of the *ETS Review*. For 1986 the topic is the Challenger accident.

Mr. Goble

Offered every year

115 HYDROLOGY/ Lecture

Provides an overview of the hydrologic cycle and its major components including precipitation, evapotranspiration, soil moisture, surface water runoff, and groundwater flow. The course focuses upon the role of water as a unifying concept of environmental science. Prerequisite: Geography 021 or 022 preferred but not required.

Staff

Offered every year

142 ENVIRONMENTAL CHEMISTRY/ Lecture, Laboratory

Focuses on the chemistry related to environmental problems, particularly aquatic chemistry and aquatic pollution. Equilibrium theory is developed as a model for aquatic chemistry, and chemical analyses of local aquatic systems are conducted in the laboratory according to Environmental Protection Agency procedures.

Prerequisite: Chemistry 102. Two lectures and one four-hour laboratory per week.

Mr. Greenaway

Offered every year

155 THE ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT/ Lecture

Reviews political and economic problems associated with such natural resources as agricultural land, energy goods, and minerals—as well as a resource common to all of us, our natural environment. Typical issues to be analyzed include the assessment of environmental impacts within a market economy, the potential role of international cartels in resource allocation, and the assessment of nuclear generation from an economic standpoint.

Mr. Shakow, Staff

Offered every other year

175 SCIENCE, DECISION MAKING, AND UNCERTAINTY/ Lecture, Laboratory

Demonstrations An examination of decision making under conditions of scientific uncertainty. The goal of the course is to describe (1) strength and limitations of scientific analysis in the assessment of environmental and technological issues; and (2) methods designed to aid decision making under uncertainty. Initial emphasis is on the structure of scientific knowledge, ways of knowing, and types of scientific uncertainty, with examples drawn from particle physics, chemistry, engineering, epidemiology, and opinion research. Case studies of environmental and technological risk management take these issues into the “real world.” The course concludes with an overview of decision making aids such as risk/benefit analysis, cost effectiveness analysis, and decision analysis.

Mr. Hohenemser, Ms. Brown

Offered every year

205 ENVIRONMENTAL PROTECTION LAW/ Lecture, Discussion

A free-wheeling discussion of pollution control in the real world, its legal, institutional, and political framework. Federal, state, and local laws and their scientific basis; agency practice and procedure; public litigation and private “citizen suits”; selecting theories and remedies, both civil and criminal; tactics and strategies; citizen “watchdog” groups; corporate and media responsibility; economy versus ecology; old tools, new tools, potential for change. Includes reading in multilithed materials—statutes, regulations, court documents, case decisions,

news accounts, and journal articles. Informal student advocacy panels assure balanced presentation of issues.

Staff

Offered every other year

210 SOCIOENVIRONMENTAL IMPACT ANALYSIS/ Lecture, Discussion

Provides an overview of the theories, methods, and models used in assessing the social and environmental effects of planned development. Attention is given to both empirical and ethical issues and to developed and developing world contexts. Cases are analyzed in terms of the available policy and institutional means (such as social impact statements), as well as the critical literature on the subject. The goal is to equip the student with both analytical skills and a critical perspective necessary to evaluate the social aspects of major projects and facilities.

Mr. Kasperson

Offered periodically

216 ENVIRONMENTAL IMPACT ASSESSMENT/ Lecture

Analysis and evaluation of impacts of federal programs and projects on inter-related physical and social components and dynamics of the human environment. Methodological as well as conceptual requisites for the interdisciplinary analysis and evaluation of impacts are discussed. Special emphasis is given to the management of the assessment team as a key factor in meeting the environmental goals of impact assessment under the National Environmental Policy act of 1969 (NEPA). Relevant case studies are selected from a wide variety of domestic and international programs.

Staff

Offered every other year

226 HOW SAFE IS SAFE ENOUGH: RISK ASSESSMENT AND HAZARD MANAGEMENT/ Lecture, Discussion

For advanced students, an introduction to the theory and methods of risk assessment and the management of environmental hazards. Case study material is drawn from concurrent research including natural hazards, hazards of consumer products, energy production, toxic chemicals, and transportation.

Mr. Kasperson

Offered every other year

257 THEORY OF MULTIOBJECTIVE RESOURCE EVALUATION/ Lecture

Introduction to the theory of multiobjective resource evaluation. Presents the full range of criteria required for the economic, social, and environmental evaluation of resource programs and projects together with selected applications.

Mr. Major, Staff

Offered periodically

265 QUANTITATIVE METHODS OF RISK ANALYSIS/ Seminar

For advanced students, an introduction to quantitative methods in risk analysis, including fault-free analysis, dose-response consequence models, risk benefit analysis, cost-effectiveness analysis, and quantitative methods for risk comparisons. Applications to auto accidents, nuclear power, cigarette smoking, and radiation health effects.

Mr. Hohenemser

Offered every other year

288 SEMINAR IN ETHICS AND RISK/ Seminar

An intensive study of the conceptual and methodological problems involved in defining and measuring risk, of some central philosophical principles of morality and distributive justice, and of the special methods by which such principles can be applied to policy problems regarding the management of complex technological hazards. Cases studied vary by year. Prerequisites: four courses in

philosophy or advanced standing in a relevant physical or social science.

Mr. Derr

Offered every other year

351 RESOURCE GEOGRAPHY: THEORY AND METHOD/ Seminar

Examination of major theories and methods of resource estimation, allocation, and management, providing coverage of the scholarly literature of the field.

Mr. Kasperson, Ms. Emel

Offered every other year

COURSES ON ENERGY PROBLEMS

130 ENERGY SOURCES AND SYSTEMS/ Lecture, Discussion

An introduction to the subject of energy for ETS majors and others interested in the utilization of fossil fuels, solar and wind power, geothermal energy, and nuclear fission and fusion. Emphasis is placed on basic concepts, thermodynamic principles, efficiency of use, and methods of converting both energy and energy resources from one form to another. The course provides the necessary background for those planning more detailed study of energy technology and/or policy and also satisfies the prerequisite for ETS 132, Alternative Energy Systems Laboratory.

Mr. Davies

Offered every other year

132 ALTERNATIVE ENERGY SYSTEMS LABORATORY/ Lecture, Laboratory

The subject matter is approached by first developing the concepts of temperature, heat, and energy and then applying these ideas to alternative energy devices. Laboratory experiments include measurement of the performance of solar collectors, photovoltaic cells, and wind machines. Corequisite: Physics 111 or 112. Two lectures and one laboratory per week.

Mr. Davies

Offered every year

233 THE CAMPUS ENERGY SELF-STUDY/ Seminar, Projects

A course tied to faculty research aimed at improving the energy efficiency of the University's buildings and heating system. Topics currently under investigation are the technical and economic performance of the cogeneration plant and monitoring of its air quality effects; heat loss characteristics of particularly inefficient buildings; and ability of student residents to reduce electricity consumption via interdormitory competition. Student work includes a mix of field and laboratory measurements and practical calculations, with seminar discussion providing the necessary theoretical background and introduction to the general literature.

Mr. Goble

Offered periodically

COURSES ON HEALTH AND HAZARD PROBLEMS

120 THE NUCLEAR AGE/ Lecture, Discussion

An examination of the nuclear age in broad comparative perspective. The goal of the course is (1) to describe the scientific and historical roots of nuclear technology, and (2) to discuss current dilemmas and nightmares. The emphasis throughout is on the rapid, often surprising, growth of technology in the context of slowly developing political and social institutions. Initial focus is on the intellectual roots of nuclear physics (1700-1913), the "golden age" of nuclear physics (1913-1939), and nuclear physics in war (1939). The main body of the course addresses the nuclear arms race and the search for arms control in the context of U.S.-Soviet relations, the rise of nuclear power and the controversies surrounding it, and the development of nuclear medicine. Students will be asked to make their own evaluation

of nuclear issues in defense, energy generation, and medicine.

Mr. Hohenemser

Offered every year

232 SELECTED TOPICS IN MICROBIOLOGY AND PUBLIC HEALTH/ Lecture, Student Presentations, Discussion

Content varies from year to year. For advanced undergraduate and graduate students who have completed Biology 109 and at least one year of college chemistry. Permission of instructor required.

Mr. Reynolds

Offered every other year

234 HEALTH AND DISEASE IN THE AMERICAN HABITAT/ Discussion

Based on readings drawn from medical and historical geography, biological science, and the history of American medicine and public health, this course takes a synoptic view of concepts and practices concerning health and disease as a form of environmental cognition and management. Discussion topics range from the changing disease environments of early New World migrants and inhabitants to present-day concerns over environmental health hazards, but emphasis is on our societal interactions with urban-industrial disease environments in the last hundred years and the intellectual consequences.

Mr. Koelsch

Offered every year

235 ENVIRONMENTAL HEALTH/ Lecture, Discussion

Principles and approaches used during the management of selected problems in environmental health: risk assessment, environmental toxicology, drinking water standards, waste treatment practices, and occupational health. Prerequisite: permission of instructor. Students need not be biology majors but must be juniors, seniors, or graduate students who can demonstrate literacy in one or more of the basic sciences and a relevant background.

Mr. Reynolds

Offered every other year

241 RISK ASSESSMENT IN ENVIRONMENTAL HEALTH/ Lecture, Discussion

Focus is on the assessment of hazardous properties of toxic chemicals in the environment and on development of public health policy. The first part covers the principles of absorption, distribution, excretion, and toxic action of chemicals on humans; animal testing; and human epidemiology. The second part covers assessment of public health risks on the basis of animal and human test results, development of standards for air and water contaminants, and uncertainty in regulating hazardous chemicals.

Ms. Brown

Offered every year

246 SCIENCE AND POLITICS OF CANCER

Focus is on one of the most dreaded diseases in modern society: cancer. In the first part, the course considers geographic distribution in this country and the world, factors contributing to its formation, and the biologic mechanisms underlying cancer. The course then concentrates on screening techniques for detecting cancer-causing agents and on methods for assessing and regulating cancer risks to humans. The third part focuses on case studies of selected human carcinogens as well as social and political controversies surrounding this disease.

Ms. Brown

Offered every other year

248 HAZARDS OF THE WORKPLACE/ Lecture, Discussion

Surveys the trends and extent of occupational hazards in the United States and inquires into the adequacy of current data bases, public policy, and managerial effort. Attention is given to the performance of corporations, OSHA, labor

unions, workers' compensation, and approaches to worker protection. Some cross-national comparisons are included. Alternatives to current managerial approaches are defined and discussed.

Mr. Kasperson

Offered every other year

286 ARMS CONTROL SEMINAR/ Seminar

Contemporary forms of military technology pose special and enormously challenging problems in the interaction between society and technology. This seminar provides an opportunity for a detailed analysis of some of these problems at an advanced undergraduate level, concentrating on a particular technology or group of technologies. After a close examination of the technical properties of the technology, the seminar considers the mechanisms in society for technology assessment and studies the military policy and other social policy issues posed. In 1987, the topic is the Strategic Defense Initiative (SDI) often called "Star Wars." Prerequisites: previous study of nuclear weapons technology and/or military policy, permission of instructor.

Mr. Goble

Offered every other year

COURSES ON ENVIRONMENTAL AND RESOURCE PROBLEMS

182 POLITICS, PEOPLE, AND POLLUTION/ Lecture, Discussion

Environmental problems and issues arise from economic development processes in both the industrialized and developing countries. What are the facts, and what are the myths in a consideration of environment and development? How do we establish policies for dealing with these problems? What are the processes by which governments make decisions addressing complex environmental/development issues here and in distant parts of the world? This course offers students an opportunity to examine the relation between environment and development in the context of developing and industrialized societies.

Ms. Thomas, Mr. Schwarz

Offered every other year

221 APPLIED SURFACE WATER HYDROLOGY/ Lecture, Problems

Focuses on practical application of hydrology for water resources management. Topics include rainfall/runoff relationship, hydrograph analysis, frequency studies of floods and droughts, reservoir operations, and flood routing. Both the techniques and the applications to problems such as water supply and flood control are covered. Prerequisite: Geography 021 and 022 or 115 or permission of instructor.

Mr. Schwarz, Staff

Offered every other year

222 SEMINAR IN RIVER BASIN PLANNING

Concentrates on one river basin and the studies made and plans prepared to develop that river basin. Students work independently on specific sections of the case under consideration. Seminar sessions give participants the opportunity to present their independent work and discuss it in a broader context. Readings, discussions, and research focus on study objectives, techniques, and results, and relate them to the appropriate economic and social values.

Mr. Schwarz

Offered every other year

231 POLITICS AND THE ENVIRONMENT/ Seminar

Intended for the student with professional career or advanced study objectives and organized about current research themes on selected policy issues. Each of these is treated in a two-week period which includes a state-of-the-art assessment, case applications, and short student position paper on an assigned question.

Representative issues include the environmental movement, models of the policy process, mediation of environmental conflicts, the politics of risk, and the role of the mass media. Permission of instructor required.

Mr. Kasperson

Offered every other year

256 PROBLEMS IN WATER RESOURCES PLANNING/ Problems course

Water resources planning techniques and water resources engineering, economic, social, and environmental topics are reviewed and applied in a realistic planning exercise. Students working in groups prepare, for a selected region or river basin, a preliminary planning document that could be used as a guide for future detailed planning. Emphasis is on the preparation, and the written and oral presentation, of the planning document in a professional manner that would be acceptable in the real world. Prerequisite: a 200-level course in environmental assessment, physical geography, economics, or environment, technology and society or permission of instructor.

Mr. Schwarz

Offered every other year

260 PHYSICAL CLIMATOLOGY/ Lecture

Provides an in-depth background to physical climatology. Basic principles of energy transfer occurring at the earth's surface are developed, including solar radiation, longwave radiation, convection, conduction, and evapotranspiration. These are then applied to a series of environmental systems relevant to humans, including agricultural crops, natural vegetation, snow and ice, and urban climates. Prerequisite: Geography 122 or permission of instructor.

Staff

Offered every year

271 GROUNDWATER RESOURCES: AN INTRODUCTION TO GROUNDWATER HYDROLOGY AND MANAGEMENT/ Lecture, Discussion

An introduction to both the geological and hydrological factors controlling the occurrence and development of groundwater and the methods and impacts of groundwater management.

Ms. Emel

Offered every year

275 CITIZEN PARTICIPATION: THEORY AND APPLICATION/ Lecture, Discussion

Erosion of public confidence in the institutions and professionals charged with managing societal affairs has brought proposals that decision making be conducted more openly and with fuller citizen participation. This course explores a range of issues surrounding this theme. Major theories regarding the nature, goals, and forms of participation are examined and contemporary experience with participatory programs is reviewed.

Mr. Kasperson

Offered every other year

DIRECTED READINGS AND RESEARCH

297 CAPSTONE RESEARCH/ Seminar

Offers an opportunity to integrate the strands of the ETS major and/or to prepare a research proposal for a master's thesis. Specific topics for investigation are chosen, largely on the basis of student interest, from a broad array including global environmental threats, energy and other resource issues, arms control and disarmament, and technological risk assessment and management. Unlike a regular course, student presentations constitute a major portion of class meetings, with the instructor as a facilitator of discussion and as a general resource for the

group. Students must be seniors or second-semester juniors and must have completed a substantial fraction of their major requirements. The seminar is offered only if six or more students require it.

Mr. Hohenemser, Staff

Offered periodically

298 DIRECTED READINGS

Offered to undergraduate students who want to pursue a specific topic on their own, with tutorial assistance by a faculty member. By permission only.

Staff

Offered every semester

299 RESEARCH AND THESIS

Offered to students who want to conduct research under the guidance of faculty. The product of the research may be an undergraduate thesis acceptable for honors in Environment, Technology and Society, or it may have another product, to be defined by the student and the faculty tutor. By permission only. Variable credit.

Staff

Offered every semester

348 RESEARCH IN HAZARD MANAGEMENT/ Seminar

Advanced research in the theory and analysis of hazard management, with particular attention to decision making and political conflict.

Mr. Kasperson

Offered periodically

398 DIRECTED READINGS AND RESEARCH

Offered to graduate students who want to pursue a specific topic on their own, under the supervision and guidance of a faculty member. By permission only. Variable credit.

Staff

Offered every semester

399 MASTER'S THESIS

Staff

Offered every semester

Foreign Languages and Literatures

DEPARTMENT FACULTY

Marvin A. D'Lugo, Ph.D., *chair*: Hispanic literature and film, narrative theory

Maria Acosta-Cruz, Ph.D.: Spanish-American literature, Baroque literature, comparative literature, literary theory

Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, classical mythology, classical art and archaeology

Marcia Butzel, Ph.D.: French literature and film, Italian film

Carol C. D'Lugo, Ph.D.: Spanish and Spanish-American narrative, literary theory

William Ferguson, Ph.D.: Spanish Golden Age literature, twentieth century Hispanic literature, Spanish literature

Kenneth Hughes, Ph.D.: German and Russian language, nineteenth- and twentieth-century German and Russian literature, comparative literature

Hartmut Kaiser, Ph.D.: German language and literature, German romanticism, the fairy tale, relations between music and literature

Dorothy Kaufmann, Ph.D.: French feminism, Sartre and existentialism, European novel

Constance M. Montross, Ph.D.: Spanish-American literature
 Gale H. Nigrosh, Ph.D.: sociolinguistics, the theory and practice of foreign language teaching, the development of written discourse
 Wendy Owanisian-Wagner, M.A.: German and Russian languages
 Walter Schatzberg, Ph.D.: age of Goethe, German expressionism in literature and the arts, German cinema, relations of literature and science
 Michael K. Spingler, Ph.D.: French theater and film, comparative drama, translation

EMERITI

Karl J.R. Arndt, Ph.D.: German
 Raymond E. Barbera, Ph.D.: Romance Languages
 J. Fannin King, M.A.: Romance Languages
 J. Richard Reid, Ph.D.: Romance Languages

UNDERGRADUATE PROGRAM

The Major in Foreign Languages and Literatures

The major in foreign languages and literatures concentrates particularly on the way in which nations may express the consciousness of their culture through literature and other arts. The interdisciplinary and humanistic spirit of the program encourages the student to relate studies in literature to other areas of the humanities and social sciences such as history, philosophy, fine arts, geography, psychology, and sociology in order to arrive at an understanding of the cultural traditions of other nations.

Requirements

- 1) No fewer than eight courses beyond the intermediate level in one or more foreign languages, of which at least one course must be *advanced topics* (designated 199 in French, German, and Spanish), and, unless individual circumstances preclude it, two units of work in a Clark-sponsored or Clark approved study-abroad program.
- 2) A number of related courses varying from five to eight, depending on the student's range of interests, are to be selected by the student in consultation with a faculty adviser.
- 3) If the major program is concentrated in one language, a reading knowledge of a second language is recommended.
- 4) At least one course in linguistics is recommended. The department does not require the student to follow a rigid sequence of courses, yet the nature of language study clearly indicates a basic progression which the typical student might follow.

Essentially, departmental offerings for the foreign language major may be organized in the following groups:

- 1) Skill-oriented courses including conversation, composition, translation (101-102, 103-104, 100-level courses)
- 2) Cross-cultural courses and courses focusing on literature and the fine arts including films and theater (100-level courses)
- 3) Courses in literature which concentrate on particular themes, theories, problems, critical approaches (100- and 200-level courses)
- 4) Courses in major figures, literary history, the styles of particular historical periods, and surveys of literature (100- and 200-level courses). These groupings are not mutually exclusive and, in the case of group two, some courses in film and theater could be considered to share some of the goals of a conversation or composition course but on a more advanced level. Similarly, it would not be possible to address oneself to the study of a style, say that of the Baroque, without pursuing questions of critical approaches and literary

theory. However, the grouping is meant to assist the student by suggesting ways of organizing his/her progress within the major, beginning with the mastering of language skills and critical methods, and then proceeding to the application of those skills and methods to particular cultural and literary areas.

HONORS IN FOREIGN LANGUAGES

A student wanting to take honors in a foreign language should choose a topic and adviser and apply to the department chair before the end of the student's junior year. At the student's discretion and with the adviser's approval, a student may register for an honors project, which will carry one unit of credit. The prerequisite for approval of the honors course is completion of at least one course in advanced topics (Language 199).

Once approval of the honors project is made by the chair, the adviser and the student will agree on the deadlines for the project's stages, but the department requires that a preliminary draft of the honors project be completed by the first Monday in April. A final version of the project is due one week before the last day of classes. A second reader, chosen by the student and the adviser, will participate in the final evaluation. In no case will honors be granted to any student who fails to meet *both* deadlines (although the project still qualifies for course credit and grade).

THE MAJOR IN COMPARATIVE LITERATURE

The major in comparative literature is intended for the student inclined toward studies in the field of foreign literatures, but whose interest lies beyond the scope of any one national literature, period, or genre. The major will afford this student the opportunity of combining related trends, movements, and other literary developments into a program that reflects the broadest possible frame in which to pursue the study of literature.

Requirements

- 1) No fewer than five courses taken beyond the intermediate level in one or more foreign languages. (An intermediate level course in a second foreign language may be used in certain cases toward the fulfillment of the language course requirement.)
- 2) Suggested sequence of core courses in comparative literature:
 - a) Ideally, the student should have taken *Problems in Comparative Literature* (Comparative Literature 110) or a similar introductory comparative literature course by the end of the sophomore year.
 - b) By the end of the junior year, the student should have completed at least two of the following genre courses: *Elements of Drama* (Comparative Literature 230), *Studies in Narrative Form* (Comparative Literature 240), or *English Poetry* (English 132). In certain cases, the sequence of courses might be altered according to the particular direction of studies determined by the student and the adviser.
 - c) While a student may wish to devote his/her senior year to a number of tutorials, autonomous projects, and related courses, those students interested in advanced study of literary theory are encouraged to take the *Seminar on Literary Theory and Practice* (Comparative Literature 251).
- 3) A number of related courses varying from five to eight, depending on the student's range of interests, are to be selected by the student in consultation with a faculty adviser.

The Advisory System

Since the department believes that individual courses will assume relevance only in the context of a total program that will have sufficient flexibility to take the

student's intellectual biography into account, it emphasizes strongly the close association between student and faculty advisers. The basic role of the adviser is to work closely with the student to ensure that the program developed will enhance and reflect the student's scholarly growth. Although all members of the department serve as faculty advisers, the following have been designated as advisers in the major areas of concentration offered by the department:

- Comparative Literature—Mr. Schatzberg
- French—Ms. Kaufmann
- German—Mr. Schatzberg
- Hebrew—Mr. Waldoks
- Spanish—Mr. D'Lugo

Students are encouraged to develop a foreign languages program involving two or more languages. To discuss this possibility as well as to plan career goals and options, contact Mr. D'Lugo.

STUDY ABROAD

For summer, semester, and yearlong programs of study abroad in France, Germany, Spain, and Italy, contact the Office of International Programs.

COURSES

- A. Classics
- B. French
- C. German
- D. Hebrew
- E. Italian
- F. Russian
- G. Spanish

A. CLASSICS

Greek 101-102 INTRODUCTORY GREEK

Refer to course description under Classics.
Mr. Burke Offered every other year

Greek 103-104 INTERMEDIATE GREEK

Refer to course description under Classics.
Mr. Burke Offered every other year

Latin 101-102 INTRODUCTORY LATIN

Refer to course description under Classics.
Mr. Burke Offered every other year

Latin 103-104 INTERMEDIATE LATIN

Refer to course description under Classics.
Mr. Burke Offered every other year

B. FRENCH

French 101-102 ELEMENTARY FRENCH/ Lecture, Discussion

Designed for students with no background in French or up to two years of high school level French. Students work on all four language skills (listening, speaking, reading, writing) with the aim of developing an active knowledge of French. Individual work is done in the language laboratory. In the second semester,

students participate in a weekly conversation group with a native French speaker. No credit is given for French 101 until successful completion of French 102.

Staff

Offered every year

French 102 ADVANCED ELEMENTARY FRENCH/ Lecture, Discussion

Designed as an entry-level course for students who have had more than two years of high school French or the equivalent but who are not yet ready for work at the intermediate level. The course emphasizes active communication through speaking and writing. Students participate weekly in small discussion groups with a native French teaching assistant and work individually in the language lab.

Staff

Offered every year

French 103-104 INTERMEDIATE FRENCH/ Lecture, Discussion

Review and expansion of fundamental grammatical structures and introduction to the reading of literary and cultural texts. Our aim is to develop skills in oral and written expression, as well as the ability to articulate ideas and take part in a meaningful discussion in French. The course includes a weekly conversation group with a native French speaker and individual language laboratory work. Prerequisite: French 102 or equivalent background, to be determined by instructor.

Staff

Offered every semester

French 120 JEUX DE MOTS: WRITING FRENCH/ Lecture, Discussion

For students who have completed work at the intermediate level. This course is designed to increase fluency in French by emphasizing written communication. Writing exercises explore different genres and styles using French models taken from literature, the press, contemporary correspondence, and advertising. The aim is to broaden students' vocabulary in French, strengthen grammatical control, and develop an appreciation for the different social levels of language.

Ms. Nigrosh

Offered every year

French 127 SOUND PATTERNS IN FRENCH/ Lecture, Discussion

A phonetics course intended for students beyond the intermediate level who want to perfect their diction in French. A program of oral exercises provides practice in pronunciation and intonation with special attention given to individual needs. Students learn to read and transcribe using a phonetic alphabet. Tape recordings of interviews, literary readings, and songs are used to illustrate different accents and speaking styles.

Ms. Nigrosh

Offered every other year

French 131 READING FRENCH LITERATURE: POETRY, THEATER, PROSE

An introduction to the analysis of French literary texts, organized by genre. In our study of poetry, emphasis is on sound and rhythm as well as meaning; in the plays, we discuss theater as a performed art based on a literary text; in the prose section of the course we examine the role of the narrator in shaping our interpretation of the narrative. Readings include a wide range of complete works from the sixteenth to the twentieth century.

Staff

Offered every year

French 135 TRANSLATION WORKSHOP/ Lecture, Discussion

Students work intensively on various texts (advertising, journalism, theater, film scripts, and fiction) exploring theory, techniques, and problems of translation. The emphasis is primarily on translation from French into English and stresses lexical and syntactic aspects of comparative style. Students become acquainted

with the variety of texts an American professional translator might expect to work on, including film subtitling.

Mr. Spingler, Ms. Butzel

Offered every other year

French 137 SPEAKING FRENCH: ADVANCED LEVEL/ Lecture, Discussion

The goal is to increase the oral fluency of the student by providing oral communication situations in a variety of contexts. Students prepare a variety of oral presentations that are presented and evaluated on a weekly basis. In contrast to the conversation groups which are corequisites for *Elementary French* 102 and *Intermediate French* 103-104, this is a course that helps students develop specific strategies for oral communication and aural comprehension in French. Students use video and tape recording equipment as part of a self-monitoring process in the course. Prerequisite: one third-year-level course, or permission of instructor.

Ms. Butzel, Mr. Spingler

Offered every other year

French 151 FANTASTIC FRENCH FICTION/ Lecture, Discussion

We examine the representation of the supernatural in selected examples of short fiction, novels, and film narratives. Students develop a comparative sense of realist and anti-realist fictional modes. Readings include Maupassant, "Le Horla"; Mérimée, "La Vénus d'Ille"; Nerval, "Aurélia"; Breton, *Nadja*; Robbe-Grillet, *Le Rendez-vous*. Films include Clair, *Paris Qui Dort*; Cocteau, *La Belle et la bête*, *Orphée*. Prerequisite: French 131, or permission of instructor.

Ms. Butzel

Offered every other year

French 157 ASPECTS AND PROBLEMS OF CONTEMPORARY FRANCE/ Lecture, Discussion

A cross-cultural seminar concentrating on the evolution in the twentieth century of traditional French values, myths, and social institutions. Conducted in French. Prerequisite: one third-year-level course, or permission of instructor.

Ms. Kaufmann

Offered every other year

French 158 THE FRENCH-SPEAKING WORLD: FRENCH-SPEAKING AFRICA/ Lecture, Discussion

An interdisciplinary analysis of the role of the French language and the culture it represents in various parts of the world, with emphasis on French-speaking Africa. Through literary and social texts, we explore such issues as the problematic status of la Francophonie, the question of *négritude*, the origins and legacy of the Algerian War. Prerequisite: one third-year-level course, or permission of instructor.

Ms. Kaufmann

Offered every other year

French 160 FRENCH CULTURE SEEN THROUGH FILM: JEAN RENOIR/ Lecture, Discussion

Includes analysis of the cinematic language and aesthetic of Jean Renoir, with particular attention to the way in which they reflect French traditions, mental structures, and social values. Readings include film scripts, film criticism, and source texts. Attendance at approximately eight to ten films is required. Conducted in French. Prerequisite: French 131 or equivalent.

Mr. Spingler

Offered every other year

French 163 FRENCH CINEMA BETWEEN THE WARS/ Lecture, Discussion

Between 1920-1939, French cinema was the site of such conflicting cultural forces as modernist experimentation and industrial decline, the foreign "imposition" of sound technology and the emergence of a "native" poetic realism, the rise of fascism and the consolidation of the Popular Front. This course concentrates on

the relationships between film aesthetics and cultural history of the period and deals especially with questions that formulate and probe the concept of a national cinema tradition. Discussions and student papers consider such issues as the heritage of the 1920s avant-garde, the historical status of poetic and popular realisms, the formation of audiences, and the cultural function of cinema as an institution in France. Film screenings include the work of René Clair, Abel Gance, Jean Vigo, Jacques Feyder, Marcel Carné, Jean Renoir, and Jean Gremillon.

Ms. Butzel

Offered every other year

French 165 FRENCH DRAMATIC EXPRESSION/ Lecture, Discussion

A workshop course intended to help the student to develop and refine skills in spoken French. Through applied work on a number of theatrical texts including diction, phrasing, rhythm, and gesture the student gains intensive practice in the control of oral expression. Attention necessarily is paid to the texts as dramatic works, but the course is primarily a workshop in advanced spoken French.

Mr. Spangler

Offered every other year

French 167 FRENCH CINEMA: THE NEW WAVE/ Lecture, Discussion

Focuses primarily on the ground-breaking films of Jean-Luc Godard, which profoundly changed the "look" of contemporary cinema including American films. We view films by other members of the New Wave including François Truffaut, Louis Malle, and Claude Chabrol, but the course primarily explores how Godard's radical transformations of film form reflected the crises in cultural and political consciousness in France in the 1960s.

Mr. Spangler

Offered every other year

French 170 THE MODERN FRENCH THEATER: EXPERIMENTS OF THE AVANT-GARDE/ Lecture, Discussion

A study of the origins and developments of the avant-garde theater of France with particular emphasis on the staging of the plays. The course focuses on the theater since 1950, especially works by Ionesco, Beckett, Genet, and Arrabal. Also explores the affinities between these playwrights and the Dada and surrealist movements and studies three precursors: Jarry, Ghelderode, and Artaud. Conducted in French.

Mr. Spangler

Offered every other year

French 175 SARTRE AND CAMUS/ Lecture, Discussion

A study of major literary works by Sartre and Camus in the context of each writer's philosophical and political theories. Conducted in French. Prerequisite: French 131 or equivalent.

Ms. Kaufmann

Offered every other year

French 181 TWENTIETH-CENTURY FRENCH NARRATIVE/ Lecture, Discussion

An advanced course on the structural and historical development of narrative fiction in twentieth-century France. Emphasis is placed on the ways these narratives examine their own status and function as artistic productions. Texts include Gide, *L'Immoraliste*; Proust, *Combray*; Sartre, *La Nausée*; Butor, *L'Emploi du temps*; Rivette, *Céline et Julie vont en bateau* (film). Prerequisite: two third-year-level courses, or permission of instructor.

Ms. Butzel

Offered every other year

French 185 WOMEN WRITERS/ Lecture, Discussion

Through the fictional, autobiographical, and theoretical texts of twentieth-century women writers in France, we explore the ways in which each writer's

a film which presents conversational material in an authentic cultural context. Recommended for students who wish a short-term exposure to German language study as a transition to the regular program.

Mr. Schatzberg

Offered every year

German 9 BASIC GERMAN CONVERSATION II/ Lecture, Discussion

A continuation of German 8. It introduces students to more advanced conversational patterns through the use of the highly successful "Guten Tag, Wie Geht's" film series. Every class session is based on a film which presents conversational material in an authentic cultural context. Recommended for students with some background in German who wish to stress the spoken language.

Mr. Schatzberg

Offered every year

German 101-102 INTRODUCTORY GERMAN/ Lecture, Discussion

Designed to impart an active command of the German language. It combines the study of grammar with oral practice and readings in literary and expository prose. No credit is given for German 101 until successful completion of German 102.

Mr. Hughes, Mr. Kaiser

Offered every year

German 103-104 INTERMEDIATE GERMAN/ Lecture, Discussion

Begins with a review of German grammar. Reading and discussion of selections adapted from German-language newspapers and magazines. Significant works in prose and drama are studied to acquaint students with outstanding writers and ideas in German literature and culture. Individual work in the language laboratory and weekly written assignments. Prerequisite: German 102, or equivalent background in the language. Both semesters are normally prerequisites for upper-level language and literature courses.

Mr. Kaiser, Mr. Schatzberg

Offered every semester

German 106 SPECIAL TOPICS IN GERMAN

Offered for variable credit.

Staff

Offered every semester

German 127 DRAMATIC EXPRESSION IN GERMAN

This course provides the more advanced student of the language with the opportunity to refine and practice the habits of gesticulation, intonation, and rhythm of contemporary spoken German. Under close supervision, the class studies and learns one or more contemporary plays with a view to eventual production or dramatic reading of the piece(s). Emphasis is placed on pronunciation, gesture, and the development of those intonational refinements appropriate to the interpersonal situations of the texts studied. Although discussion of the dramatic works as literature clearly is necessary, it should be noted that the course is essentially an advanced language course. Active participation of all students is required. Examination consists of the presentation of a dramatic passage that the student has prepared outside of class. Prerequisite: German 104 or equivalent.

Staff

Offered every other year

German 131 SPOKEN AND WRITTEN GERMAN/ Lecture, Discussion

This third-year course aims at strengthening good speech habits with regard to German grammar and syntax, at expanding the active vocabulary, and at improving students' ability to express themselves in writing. Literary and journalistic texts serve as a basis for discussion of important issues in contemporary

German. Weekly written assignments. Recommended for majors. Prerequisite: German 104 or equivalent.

Mr. Kaiser, Ms. Owanisian

Offered every year

German 134 WORKSHOP IN TRANSLATION/ Lecture, Discussion

Gives students a practical, concrete experience of what it means to "translate" from one language into another. The student sees that the process is not nearly so simple as it may have seemed, but that there is a scale of texts which range from the relatively easy to those that virtually defy rendering into another tongue. In the more difficult cases, it is demonstrated that there is no such thing as a mere rendering of a text into another language, but that the process in, say, poetry, requires transposition of a whole cultural reflex into another. Various kinds of texts will be examined, from the sober style of the scientific article to the emotionally charged language of lyric poetry. Prerequisite: German 104 or equivalent.

Staff

Offered every other year

German 140 MODERN GERMAN PROSE/ Lecture, Discussion

Designed to familiarize the student with prose—from West and East Germany—by Kafka, Hesse, Mann, Böll, Grass, Plenzdorf, and Wolf; includes discussions, oral and short written reports in German. Prerequisite: German 104 or equivalent.

Mr. Hughes

Offered every other year

German 142 GERMAN ROMANTICISM/ Lecture, Discussion

An analysis of German romanticism from its beginning in the 1790s to its decline in the 1830s, aesthetic credos, lyric poetry, the drama, major prose works (among them, the fairy tale as an art form) are discussed in their relation to the intellectual history of the period. Authors include the Schlegel brothers, Holderlin, Novalis, Tieck, Wackenroder, Kleist, Brentano, E.T.A. Hoffmann, Eichendorff, and Heine. Prerequisite: German 104 or equivalent.

Mr. Kaiser

Offered every other year

German 145 THE GERMAN NOVELLE/ Lecture, Discussion

A historical and critical study of this uniquely German genre. Particular attention is paid to narrative technique and to the typical features of the novelle distinguishing it from the short story on the one hand and from the novel on the other. Selections range from early romanticism to Thomas Mann. Where applicable, a number of poems by the author under consideration are discussed. Prerequisite: German 104 or equivalent.

Mr. Kaiser

Offered every other year

German 156 THE MODERN GERMAN SHORT STORY/ Lecture, Discussion

After years of isolation and stagnation during the Nazi period and its collapse in 1945, young writers, eagerly trying to establish new values and anxious to link up again with the international literary developments, discovered the English and American short story with its well established tradition and adapted this model to the historical, social, and cultural conditions in Germany. The short story became the most important literary form during the post-war years and has maintained its significance to the present time. This course involves a careful reading of representative examples by leading modern German writers with special emphasis on thematic variety and structural complexities of the genre. Prerequisite: German 104 or equivalent.

Ms. Owanisian

Offered every other year

German 166 GERMAN DRAMA FROM LESSING TO EXPRESSIONISM/ Lecture, Discussion

Includes reading and discussion of representative plays by the chief German dramatists from the end of the eighteenth to the early twentieth century. Focuses on the sociopolitical aspects of these works, the aims and concepts of the dramatic art, and the changing traditions of playwriting. Authors include Lessing, Goethe, Schiller, Kleist, Grillparzer, Buchner, Hebbel, Hauptmann, Schnitzler, and Kaiser. Prerequisite: German 104 or equivalent.

Mr. Kaiser

Offered every other year

German 206 SPECIAL TOPICS IN GERMAN

Offered for variable credit.

Staff

Offered every semester

GERMAN LITERATURE COURSES CONDUCTED IN ENGLISH

German 112 THE FAIRY TALES OF THE BROTHERS GRIMM/

Lecture, Discussion

Fairy tales are among the oldest and simplest forms of literature. They communicate archetypal patterns of human experience and societal behavior; they reflect human wisdom of all ages derived from all cultures; their moral teaching is universal and universally applicable. The well-known collection of the Brothers Grimm includes 210 fairy tales; about half of them are studied using different approaches to textual analysis in order to acquaint students with a variety of critical methods. No prerequisites.

Mr. Kaiser

Offered every other year

German 150 THE NEW GERMAN CINEMA/ Lecture, Discussion

A study of selected films of contemporary German film directors, Fassbinder, Herzog, Kluge, Schlöndorff, and Wenders. The goal of the course is to examine the cinematic technique and world view unique to each director as well as German-American cultural cross-currents and relevant social issues as represented in the films under consideration. Students are expected to study the films, read selected critical writings, write short film critiques, and produce a substantial paper dealing with some aspect of New German Cinema. Students may take the course for German language credit by participating in a German language tutorial and reading selected works in German.

Mr. Schatzberg

Offered every other year

German 168 MUSIC IN GERMAN LITERATURE AND THOUGHT/

Lecture, Discussion

Countless musicians, philosophers, and writers have speculated on the nature of music, its mysterious power to influence people and communicate strong feelings. This course is devoted to reading and discussion of works by the following authors from the German-speaking countries of the nineteenth and twentieth centuries: Wackenroder, Novalis, Kleist, Schopenhauer, E.T.A. Hoffman, Goethe, Grillparzer, Heine, Mörike, Wagner, Nietzsche, Hesse, and Thomas Mann. The approach is predominantly thematic; however, several works are studied that reveal the author's successful attempts to employ musical devices and structures in his literary creations. Conducted in English.

Mr. Kaiser

Offered every other year

German 188 THE CULTURE OF THE WEIMAR REPUBLIC IN LITERATURE, FILM, AND THE ARTS/ Lecture, Discussion

Examines social and political satire and efforts at cultural regeneration between

the first world war and the rise of Nazism. The following works are studied within the cultural context of the period:

- Prose: Hesse's *The Steppenwolf*, Döblin's *Berlin Alexanderplatz*, Remarque's *All Quiet on the Western Front*
Drama: Brecht's *A Man's a Man*, St. Joan of the Stockyards, *The Measures Taken*; Zuckmayer's *The Captain from Koenigstein*
Musicals: *Rise and Fall of the City of Mahagonny*, *The Three Penny Opera* (Brecht/Weil)
Film: *M*, *The Blue Angel*, *The Three Penny Opera*, *Berlin Alexanderplatz*, *Kuhle Wampe*
Painting: Georg Gross, Max Beckman, Otto Dix
Architecture: The Bauhaus School

The course is conducted in English, but students may receive German credit by participating in a German language tutorial and reading selected works in German.

Mr. Schatzberg

Offered every other year

German 197 THE FAUST THEME IN LITERATURE AND MUSIC/

Lecture, Discussion

A study of man's search for forbidden knowledge and power as represented in literature and music by the character of Faust from the Reformation to the present. The legend of the defiant necromancer who sold his soul to the devil emerged in the sixteenth century and developed into one of the great themes of Western literature. Faust is the representative of each age in which he appears. He may be a universal figure embodying the ideal man, as he does in Goethe's master piece; or he may be the incarnation of the sin characteristic of an age or a nation, as he is in Thomas Mann's *Doctor Faustus*. The course explores the changing concepts of Faust from the beginnings of the legend in German folklore to the present, concentrating on the following major treatments of the theme: *The History of the Damnable Life and Deserved Death of Doctor John Faustus* (1582), Marlowe's *Dr. Faustus*, Klinger's *Faustus, His Life, Death and Doom*, Goethe's *Faust*, Part I and II, Thomas Mann's *Dr. Faustus*, Paul Valéry's *Mon Faust* and some of the operatic treatments such as Gounod's *Faust*, Berlioz's *The Damnation of Faust*, Boito's *Mefistofele*, Busoni's *Doctor Faustus*. No prerequisites.

Mr. Kaiser

Offered every other year

German 199 ADVANCED TUTORIAL IN GERMAN LITERATURE/

Lecture, Discussion

The content of this course is determined by the needs and interests of individual students. Ordinarily it is taken by majors in their senior year as a capstone experience. Other advanced students of German language and literature may be invited to participate in the tutorials as space permits.

Staff

Offered every year

German 299 FRENCH, GERMAN, SPANISH: SEMINAR IN FOREIGN LANGUAGE TEACHING/LEARNING/ Seminar

See Description under French 299.

Staff

Offered every year

D. HEBREW

Hebrew 101-102 ELEMENTARY HEBREW

Modern, conversational Hebrew. Emphasis on speaking, reading, writing, and listening skills. Acquisition of vocabulary and basic grammar through conversation, drills, reading of simple texts, and listening to tapes. Three class meetings

a week plus one hour of drill and one hour of individual work in the language laboratory. No credit is given for Hebrew 101 until successful completion of Hebrew 102.

Ms. Nave

Offered every year

Hebrew 103 INTERMEDIATE HEBREW

A survey of significant Hebrew texts of the Biblical and post-Biblical period. Enrichment and reinforcement of verbal expressions and grammatical structures. Classes meet three times weekly and are supplemented by individual work in the language laboratory and one hour of drill. Hebrew 102 or the equivalent required.

Ms. Nave

Offered every year

Hebrew 104 INTERMEDIATE/ADVANCED HEBREW

A survey of significant Hebrew texts of the pre-modern and modern periods. Literature and newspapers are employed. Enrichment of verbal and written expressions and grammatical structures. Classes meet twice weekly and are supplemented by individual work in the language laboratory and one hour of drill. Hebrew 103 or the equivalent required.

Mr. Waldoks

Offered every year

HEBREW LITERATURE/JUDAIC STUDIES COURSES CONDUCTED IN ENGLISH

Hebrew 119 INTRODUCTION TO THE HEBREW BIBLE/ Lecture, Discussion

A survey of the books of the Hebrew Bible focusing upon the development of basic Jewish religious themes. No Hebrew language background required. Conducted in English.

Staff

Offered every other year

Hebrew 123 THE RABBINIC LITERARY TRADITION/ Lecture, Discussion

An English language study of the roots and development of non-legal rabbinic narratives, including narrative strands in the Bible; midrashic methodology (with an extended look at sources, schools, techniques); and how medieval Jewish philosophy, mysticism and literature constitute another mode of Midrash. Texts used focus on ethical issues of current concern. No previous background required.

Staff

Offered every other year

Hebrew 124 THE JEWISH LEGAL TRADITION/ Lecture, Discussion

An English language study of the roots and development of Jewish law, including Biblical legal codes, Midrash, Halacha, Mishnah, Gemara, Responsa, Commentaries, Codes (with an extended look at the Mishnah Torah of Maimonides and the Shulchan Aruch), and Modern Responsa. No previous background required.

Staff

Offered every other year

Hebrew 140 THE JEWISH MYSTICAL TRADITION/ Lecture, Discussion

A survey of Jewish mystical thought from the rabbinic period through the rise of Hasidism in the mid-eighteenth century. Special attention to the role of Jewish mysticism as a vehicle for Jewish mythic consciousness. A study of the Kabbalah of Spain, the innovations of the Lurianic school and the literature of the Kabbalah, most notably, the Zohar. Cosmological and theological underpinnings of Hasidism are discussed, together with their impact on contemporary Jewish and non-Jewish thought.

Mr. Waldoks

Offered every other year

Hebrew 160 MODERN ISRAELI LITERATURE/ Lecture, Discussion

The literature of Israel since 1948 ranges from the profoundly religious to the starkly secular. The unique nature of the dreams and yearnings of the contemporary Jewish nation is revealed through a careful study of that literature. We study (in English translation) the works of Agnon, Hazaz, Megged, Amihai, and others. No Hebrew language prerequisite.

Staff

Offered every other year

Hebrew 185 MODERN JEWISH LITERATURE/ Lecture, Discussion

Through the use of Yiddish and Hebrew literature in translation, this course surveys the creation of modern Jewish literature in the nineteenth and twentieth centuries. The pioneers of Yiddish literature (Mendele Mocher Sefarim, Sholom Aleichem, Peretz) and Hebrew Literature (Ahad HaAm, Bialik, Brenner, Frishman) are discussed.

Mr. Waldoks

Offered every other year

E. ITALIAN**101-102 ELEMENTARY ITALIAN/ Lecture, Discussion**

Designed for students with no previous study of Italian, aimed at acquisition of basic speaking, reading, and writing knowledge of the language. Three hours weekly plus laboratory practice. No credit is given for Italian 101 until successful completion of Italian 102.

Staff

Offered every year

F. RUSSIAN

Clark students may take additional courses in Russian language and literature at the College of the Holy Cross through the Worcester Consortium for Higher Education.

Russian 101-102 INTRODUCTORY RUSSIAN/ Lecture, Discussion

An introduction to the written and spoken language. Three class periods and three laboratory sessions a week. No credit is given for Russian 101 until successful completion of Russian 102.

Mr. Hughes, Ms. Owanisian

Offered every year

Russian 103-104 INTERMEDIATE RUSSIAN/ Lecture, Discussion

Advanced Russian grammar. Continued emphasis upon reading and conversation. Three class periods and three laboratory sessions a week.

Staff

Offered every year

Russian 106 DIRECTED READINGS

Students interested in specific authors and/or topics in Russian literature and civilization may receive instruction and guidance in either English or Russian. Offered for variable credit.

Mr. Hughes

RUSSIAN LITERATURE COURSES CONDUCTED IN ENGLISH**Russian 185 THE RUSSIAN NOVEL IN THE NINETEENTH CENTURY/ Lecture, Discussion**

An examination of representative great Russian epics of the last century in English translation. They are considered both as works of literary art and as social and historical artifacts. Readings may vary owing to the availability of texts but will

usually include Tolstoy, Dostoevsky, Gogol, Goncharov, Turgenev, and Chekhov. Some reading in Russian intellectual history and in the "radical democratic" critics.

Mr. Hughes

Offered every other year

G. SPANISH

Spanish 101-102 ELEMENTARY SPANISH/ Lecture, Discussion

Designed for students with no previous knowledge of Spanish. The aim is acquisition of a basic speaking, reading, and writing knowledge of idiomatic Spanish as preparation for subsequent courses conducted in the language. There are three hours of class contact per week plus individual work in the language laboratory. No credit is given for Spanish 101 until successful completion of Spanish 102.

Mr. D'Lugo, Mr. Ferguson

Offered every semester

Ms. D'Lugo, Ms. Acosta-Cruz

Spanish 102 ELEMENTARY SPANISH-INTENSIVE/ Lecture, Discussion

An accelerated elementary course for students who have started the study of Spanish but who have not qualified for *Intermediate Spanish*. Three hours weekly plus individual work in the language laboratory.

Ms. Montross, Staff

Offered every semester

Spanish 103-104 INTERMEDIATE SPANISH/ Lecture, Discussion

Offers consolidation of basic skills in the language for students who previously have completed Spanish 102 or its equivalent. First semester stresses development of oral facility in Spanish through a variety of exercises including taped interviews with native speakers, improvisational acting in brief scenes from plays, and discussions based upon readings related to topics of Hispanic culture and society. Grammar review is based upon the specific needs of the group. Prerequisite: Spanish 102 or equivalent skill in the language. Spring semester includes more extensive readings on themes of Hispanic culture as the basis for class discussion and essay assignments. The focus of the spring semester is those activities in speaking, reading, and writing that provide the student with sufficient mastery of basic skills in Spanish to allow for reasonable adjustment to advanced course work in Hispanic studies.

Ms. Montross, Ms. D'Lugo, Staff

Offered every semester

Spanish 127 PRACTICE IN ORAL AND WRITTEN SPANISH/ Lecture, Discussion

An advanced intermediate course to help students develop fluency and accuracy in the spoken and written language. Classes stress composition and pronunciation as well as conversation practice. May be taken after the first semester of Spanish 103 with permission of the instructor.

Ms. Acosta-Cruz, Staff

Offered every semester

Spanish 131 READINGS IN HISPANIC LITERATURE/ Lecture, Discussion

An introduction to the artistic and cultural variety of modern Spanish and Spanish-American narrative and dramatic literature. The course combines representative authors of both Spain and Spanish America, emphasizing the creative vision of particular writers and the cultural and political context within which their works are situated. Each semester the readings are organized around a particular theme that integrates the works of both peninsular and Spanish American works. Themes normally covered include the idea of cultural continuity and modernity, notions of norm and deviance in the Hispanic community, the

concept of revolution as a collective and individual ideal. Since course content is variable, students may elect to take this course twice. Prerequisite: Spanish 104 or equivalent skill in the language.

Ms. D'Lugo,
Mr. Ferguson, Staff

Offered every semester

Spanish 133 HISPANIC THEMES/ Lecture, Discussion

A third-year course of readings and discussions intended to introduce the student to the diversity of Hispanic culture through a close consideration and analysis of a limited number of problems as reflected in selected readings from literature, history, and cultural anthropology as well as current periodicals in Spanish. The course focuses on one or two of the following national cultures: Chile, Cuba, Mexico, Spain, Argentina. Topics normally covered include: parallel development of Anglo-American and Hispanic cultural institutions, changing identity of the family and the individual in twentieth-century society, the emerging identities of women in these societies, and a comparison with the traditional Hispanic definition of women's role. Readings and discussions will be in Spanish.

Mr. Ferguson, Ms. D'Lugo

Offered every year

Spanish 135 HISPANIC FILM AND SOCIETY/ Lecture, Discussion

An examination of Spanish-language cinema as cultural reflection and artistic form within the Hispanic world. The course involves consideration of a number of major filmmakers from Spain, Mexico and Cuba, with an emphasis on the ways in which these directors develop critiques of Hispanic society and cultural institutions. Readings normally include film scripts, critical readings, and source narratives. Class work consists of viewing, discussion, and close analysis of ten major films. Theme for fall, 1987: "New Cinema in Spain"; theme for fall, 1988: "Films of Luis Buñuel." Prerequisite: Spanish 131 or equivalent skill in the language.

Mr. D'Lugo

Offered every other year

Spanish 136 WOMEN IN HISPANIC LITERATURE/ Lecture, Discussion

Analyzes the role of women in Hispanic culture from its beginnings to the present. Emphasis is on the link between the patriarchal social order and violence against women. Readings include major works from both the Spanish and Latin American tradition. Prerequisite: Spanish 131 or equivalent skill in the language.

Ms. Montross, Staff

Offered every other year

Spanish 137 ADVANCED ORAL AND WRITTEN SPANISH/ Lecture, Discussion

A third-year level course, this is a rapid review of grammar and style, with exercises in composition, pronunciation, and intonation. It is intended to allow the student with one or more years of advanced college work in Spanish (or equivalent) the opportunity for refinement and mastery of both written and spoken Spanish. Emphasis is placed upon control and accuracy of expression in writing through regular compositions and translation exercises as well as work in phonetics and diction. Prerequisite: Spanish 131 and one course above that level.

Ms. Montross

Offered every year

Spanish 138 HISPANIC LITERATURE OF POLITICAL COMMITMENT/ Lecture, Discussion

A study of the creative writer's position vis-a-vis the social and political movements of the twentieth century. Writers discussed include Neruda, Vallejo, Hernández, and Cardenal; Cuban writers and poets in their sometimes ambiguous relationship to the Revolution; the writers of the Chicano movement and

the dream of Aztlan; and Puerto Rican authors both on the mainland and on their native island. The course is conducted in English; a reading knowledge of Spanish is required. Prerequisite: Spanish 131 or permission of the instructor.
Mr. Ferguson

Offered every other year

Spanish 139 CONTEMPORARY CARIBBEAN FICTION/ Lecture, Discussion
Readings and discussions of selected works by the principal figures in contemporary Spanish-language fiction from the Caribbean Basin. The emphasis is on Neo-Baroque texts that see fiction as an artifact alternately escaping from or representing reality by playing with language. Readings also include contemporary critical theory that provides a political and social context for this mode of fiction. Authors include Guillermo Cabrera Infante, Severo Sarduy, Luis Rafael Sánchez, Edgardo Rodríguez-Julia, and Alejo Carpentier. Prerequisite: Spanish 131 or equivalent skill in the language.

Ms. Acosta-Cruz

Offered every other year

Spanish 140 SPANISH DRAMATIC EXPRESSION/PLAY PRODUCTION/ Lecture, Discussion

Intended to provide the student who has completed Spanish 104 or equivalent with an opportunity to develop and refine habits of gesticulation, rhythm, and intonation of contemporary spoken Spanish. Includes close work on two contemporary dramatic works, which will give the student practical experience in the skills of interpersonal encounters in which control of oral expression is required. Although some consideration is given to the texts as dramatic works, the course is principally a workshop in advanced oral Spanish. Prerequisites: Spanish 104 or equivalent skill in the language.

Staff

Offered every year

Spanish 141 SPANISH TRANSLATION WORKSHOP/ Lecture, Discussion

A workshop and not a descriptive course in the techniques of translation. The purpose is to enable students to translate printed data (commercial, technical, scientific, comic strips) from Spanish into English and vice-versa. The course is based on a linguistic approach and consists of formal sessions in which this basic theory and its diverse techniques will be taught—plus the workshops. The workshop sessions, in which students translate printed material, are the testing ground for the theory expounded during the “magisterial” lessons. Other exercises cover: morphemes, lexicon and cognates, syntagmatic sequences, clauses, and sentences. Paragraph and “textual” translation is dealt with separately. Prerequisites: language majors—four college semesters of Spanish or equivalent; linguistics majors—a course in at least one of the following: general linguistics, theoretical linguistics, transformational grammar, semantics. Spanish 131 or permission of instructor.

Mr. Ortiz

Offered every year

Spanish 142 LATIN AMERICA THROUGH ITS LITERATURE/ Lecture, Discussion

An exploration of the ways in which different Latin American writers have tried to define what Latin America is from the nineteenth century to the present. In seeking to differentiate Latin American culture from that of traditional European forms, the search for a true Latin American identity has been carried on through its literature. Emphasis is on essays by writers from different periods such as José Martí and Gabriel García Márquez. The need to define a Latin American identity is examined as well through representative works of fiction touching the

major themes of Latin American literature. Prerequisite: Spanish 131 or equivalent skill in the language.

Ms. Acosta-Cruz

Offered every other year

Spanish 143 SPANISH ESSAY AND THOUGHT/ Lecture, Discussion

Readings and discussions of selected essays from influential writers of Spain and Spanish America as these express the cultural, social, political, and ethnic values and concerns of the Spanish-speaking people. Readings reflect both the traditional notions of Hispanic society and contemporary views as posed in recent magazines, periodicals, and newspapers. Prerequisite: Spanish 131 or permission of instructor.

Ms. Acosta-Cruz

Offered every other year

Spanish 145 SPANISH-AMERICAN SHORT STORY/ Lecture, Discussion

An introduction to the tradition and development of shorter narratives in Spanish America. Class discussion and readings emphasize the richness of artistic innovation from the earliest "primitive" narrations of colonial chroniclers through the progressive refinements of theme, local color, style, and narrative technique characteristic of this oldest and most favored of Spanish-American literary genres. Particular attention is paid to those authors and stories that represent the landmarks in the shorter narrative tradition: writings of Rubén Darío, Horacio Quiroga, Borges, Fuentes, Cortázar, Rulfo. Conducted in Spanish.

Mr. Ferguson, Ms. D'Lugo

Offered every year

Spanish 146 SPAIN AT THE CROSSROADS/ Lecture, Discussion

A consideration of post-Franco Spain, as reflected in literature, film, theater, and journalism. In addition, an examination of recent political and historical writings that have attempted to expound integrated visions of the "new" Spanish society. Prerequisite: Spanish 131 or equivalent skill in the language.

Mr. D'Lugo

Offered every other year

Spanish 199 ADVANCED TOPICS TUTORIAL/ Seminar

Close readings and discussion of representative works by major Spanish writers of the premodern period. Ordinarily it is taken by majors in their senior year as a capstone experience. Topics for 1986-88: Generation of 1898, the Spanish Baroque, *Don Quijote* and Baroque literature of the Indies.

Mr. D'Lugo, Ms. D'Lugo

Offered every semester

Ms. Acosta-Cruz, Mr. Ferguson

Spanish 206 SPECIAL TOPICS IN SPANISH/ Seminar

Variable credit.

Staff

Offered every semester

Spanish 207 FIELD WORK IN THE HISPANIC COMMUNITY/ Seminar

Students have supervised contact and work in one of a variety of community agencies and projects servicing the Hispanic community in Worcester (bilingual school programs, Casa de la Comunidad, Worcester Legal Services, etc.). Students participating in particular field projects are assigned to a member of the Department and/or persons in related academic departments. Under the direction of the adviser, students are placed in a particular community project. Through consultation with the campus adviser and a designated supervisor from the cooperating agency, the student works with members of the Hispanic community while developing a written project related to the particulars of language, culture, and related problems of the bilingual community in Worcester. Prerequisites: proficiency in Spanish as determined by the Department; successful

completion of course work in the field or fields related to the specific project area; permission of instructor. Offered for variable credit.

Ms. Nigrosh, Ms. Acosta-Cruz

Offered every semester

Spanish 299 FRENCH, GERMAN, SPANISH: SEMINAR IN FOREIGN LANGUAGE TEACHING/LEARNING/ Seminar

See Description under French 299.

Staff

Offered every year

French

See Department of Foreign Languages and Literatures.

Geography

GRADUATE SCHOOL OF GEOGRAPHY FULL-TIME FACULTY

B.L. Turner II, Ph.D., *director*: cultural ecology, agriculture

Leonard Berry, Ph.D.: applied geomorphology, environmental development

Martyn J. Bowden, Ph.D.: cultural humanistic and historical urban-social

Ronald Eastman, Ph.D.: cartography, geographic information systems

Jacque L. Emel, Ph.D.: water resources, resource management

Susan Hanson, Ph.D.: urban-social, transportation

Stanley R. Herwitz, Ph.D.: hydrology, biogeography, field methods and instrumentation

Douglas L. Johnson, Ph.D.: cultural ecology, arid lands management

Gerald J. Karaska, Ph.D.: urban/economic, development

Roger Kaspersen, Ph.D.: political, hazards

Robert W. Kates, Ph.D.: theory of human environment, hazards

William A. Koelsch, Ph.D.: history of geography, environmental history

Laurence A. Lewis, Ph.D.: geomorphology, food and soil in the tropics

Richard Peet, Ph.D.: political economy, Marxist geography

Harry E. Schwarz, B.C.E., P.E.: water resources and use

Harry J. Steward, Ph.D.: cartography, remote sensing

ADJUNCT FACULTY

Perry O. Hanson III, Ph.D.: quantitative methods, geographic information systems

David C. Major, Ph.D.: water resource economics

AFFILIATE FACULTY

Anne Buttimer, Ph.D.

Daniel Dworkin, Ph.D.

Kirsten Johnson, Ph.D.

Geraldine Pratt, Ph.D.

STAFF

Lori Wall, B.A.: cartographer,

cartography laboratory manager

Jean Heffernan: assistant to the director

Jenny Marie Johnson, M.S.: map and
geography librarian

EMERITUS

Raymond E. Murphy, Ph.D.

The Graduate School of Geography was organized in 1921, making Clark the second university in the United States to establish an independent graduate program in geography. At present, advanced training is provided, leading to the

Ph.D. degree. In addition, the school offers an undergraduate major and a seven-year program (B.A./Ph.D. degree). Clark is a major center for geographical training and research in the United States. The program emphasizes individual attention through student-teacher dialogue.

Publications

A professional journal, *Economic Geography*, is edited by a faculty member. Started at Clark University in 1925, it is the only journal published in English that specializes in economic geography. The journal has a worldwide distribution with a total circulation of about 5,000.

The graduate students maintain the Clark University Geographical Society (CUGS). Their publication, *Monadnock*, keeps School of Geography alumni in touch with each other and with news and scholarly activities of the school.

The *Annals of the Association of American Geographers* is the principal outlet for major scholarly articles in geography. Published quarterly, the journal prints papers on a wide variety of topics representative of contemporary geographic research. A Clark faculty member is now editor of the *Annals*.

In addition, the School produces the *Wallace W. Atwood Lecture Series*, which features the lectures of distinguished scholars of geography and related fields of study.

The professional work of some members of the department is published in the CENTED (Center for Technology, Environment and Development) publication series at Clark University.

GEOGRAPHY UNDERGRADUATE PROGRAM

The Undergraduate Geography Program covers a three-year period (sophomore-senior), during which 50-80 percent of the student's course work is accounted for within the program. A minimum set of geography requirements is built into the major, and course work in cognate fields is selected in consultation with the student's adviser in light of individual needs and capacities.

Emphasis in the undergraduate major in geography is on broad training in the field. Within this training, some specialization is facilitated by the organization of courses in streams and students are encouraged to take a series of courses in one or two of these *streams*. Geography majors are encouraged to gain skills in quantitative methods, computer programming, mapping, and research methods.

There is a departmental advisory system headed by a central, undergraduate adviser who advises all incoming majors. As students advance through the program, they may select another adviser whose interests best match their own. A geography major's courses for each semester must be approved by the adviser.

Courses are sequential to allow progressively greater use of skills from 00-level to 100-level to 200-level courses. The recognized areas of concentrated interest (streams) at the undergraduate level are:

- a) cultural/humanistic
- b) environmental affairs/management
- c) physical geography of human systems
- d) regional/international development/political economy
- e) urban/social/planning
- f) cartography (Because cartography has fewer faculty than the other groups, offerings are more limited in this area.)

The Geography Student Organization (GSO) functions as a professional and social outlet for undergraduates. Students are encouraged to participate in its career seminars, trips, and other activities.

REQUIREMENTS FOR GEOGRAPHY MAJORS

To graduate as a geography major, the student must complete the following courses:

1. *Within the Graduate School of Geography*
 - (a) Geography 011, *Survey of Geography*
 - (b) Two courses selected from among the following:
 - Geography 021, *Weather, Climate and Vegetation* or
 - Geography 022, *Introduction to Physical Geography: Landforms*
 - Geography 015, *Introduction to Economic Geography*
 - Geography 017, *Introduction to Cultural Geography*
 - Geography 018, *Introduction to Urban Geography*
 - Geography 019, *Introduction to Environmental Management*
 - (c) Two skills courses selected from among the following:
 - Geography 110, *Computer and Quantitative Methods: Introduction*
 - Geography 247, *Computer and Quantitative Methods: Intermediate*
 - Geography 181, *Introduction to Cartography* or an advanced cartography or remote sensing course
 - Geography 137, *Time and Space in Old and New England*—for students in the cultural-humanistic stream
 - Geography 141, *Research Methods in Geography*
- In addition, the department accepts a second-year, second-semester language course as a skill. Other courses equivalent to those listed above may be accepted by the student's adviser
 - (d) A 100-level course taken as a "writing course"
 - (e) A 200-level geography senior seminar
 - (f) A 200-level course in the same stream as the senior seminar
 - (g) At least three additional courses in geography, taken at 200-level
2. *In Disciplines Related to Geography*

Four elective courses in related disciplines, selected in consultation with adviser, must be taken.

DUAL MAJOR: REQUIREMENTS

For students majoring in geography and another discipline, the requirements are: *Survey of Geography* (011), one 00-level introductory course, two skills courses, a 100-level writing course, a 200-level *senior seminar*, a 200-level course in the same stream as the senior seminar.

HONORS PROGRAM IN GEOGRAPHY

Students with an outstanding academic record are eligible to participate in the Geography Honors Program. To graduate with honors in geography the student must successfully complete either a one- or two-credit independent honors project conducted under the supervision of a faculty member

The Geography Honors Program is open to juniors who, by the end of the first semester of the junior year, have a minimum grade point average of 3.25 overall and 3.5 in the geography major (geography courses and cognate courses) and who can demonstrate that they have the appropriate research background required to undertake independent geographic research.

The student who wants to carry out a two-semester honors thesis will register for geography honors the spring semester of the junior year and the fall semester of the senior year. A thesis proposal must be approved by the supervising faculty member by November 1 in the student's junior year. Students wishing to pursue a one-semester honors thesis can do so either in the spring of the junior year or in the fall semester of the senior year; the deadline for approval of the thesis

proposal is November 1 of the junior year if the thesis is to be completed in the junior year, and April 1 of the junior year if the thesis is to be conducted in the fall semester of the senior year. Students interested in the Geography Honors Program should get additional details from the undergraduate adviser in the Graduate School of Geography

SEVEN-YEAR B.A./PH.D. PROGRAM

A formal seven-year program for Clark undergraduate students is offered, leading to the Ph.D. degree in geography. At the undergraduate level, applicants must major in geography or a dual or interdisciplinary field, and make application at the end of the first semester of the junior year. The B.A./Ph.D. program usually includes spending the sixth year off campus, in residence at another university or agency. Admissions are limited to a very small number of highly qualified students and in subfields of concentration that are appropriate to Clark's range of offerings. For specific information, contact the director of the School of Geography. Applications to these programs should be submitted to the Geography Office no later than February 15.

THE GRADUATE SCHOOL OF GEOGRAPHY PH.D. PROGRAM

Admissions:

Applicants with or without prior training in geography are welcome. Depending on their concentrations, they may be required to improve their knowledge of elements of geography, cartography, or descriptive statistics. Courses taken to remedy any deficiencies will not count as part of the regular program. The Graduate Record Examination scores (verbal and quantitative) are required of all American students.

Graduate Program:

The graduate program of study in geography at Clark focuses on the Ph.D. degree, and only those students seeking training for that degree are admitted into the program.

Degree Objectives:

Graduate education eases entry into a community of professional scholars-learners who learn outside the formal structure of the classroom. Such scholars are skilled in constructing learning experiences for themselves and in structuring their learning in a form that suggests avenues in the continuing development of their fields of study. The program of study aims at providing experiences that nurture the development of the knowledge and skills essential to that mode of learning.

As prospective members of this geography community, graduate students work toward the following objectives:

- 1) development of extensive knowledge in the content of geography and competence in the use of research skills
- 2) development of a sense of problem (for research problems are at the core of an experiential learning process)
- 3) development of divergent thinking skills from which creative and original ideas evolve
- 4) development of a sense of the tentativeness of knowledge and a patience with ambiguity
- 5) development of a tough-minded learning discipline
- 6) development of a sense of self-confidence and competence
- 7) development of a sense of the nature of the community of geographers.

The program is designed to enable students to focus their learning experience with these philosophical guidelines in mind.

Program Structure:

The graduate curriculum is organized to give a broad view of the field of geography and its teaching, as well as a specialized approach to selected subfields. The subfields, organized in accordance with the interests and competencies of the staff, include: cultural/humanistic, environmental resource management, physical geography of human systems, regional/international development/political economy, urban/social/planning, and cartography/remote sensing/geographic information systems. In addition, ongoing projects conducted by research groups in the School of Geography, the programs for International Development (ID), and for Environment, Technology, and Science (ETS), and the Center for Technology, Environment and Development (CENTED) should be considered an integral part of the graduate curriculum; students may choose to structure their programs around such collaborative research endeavors. (See appropriate information elsewhere in this catalogue on CENTED, ETS, and ID.)

The first year of graduate study is planned to broaden the student's knowledge of the field of geography and help define student interests in the context of the Clark program. First-year graduate students must take two of three graduate core seminars (*Development of Western Geographic Thought*, *Explanation in Geography*, and *Research Methods*) during the first year of study. The remainder of the student's coursework is selected in consultation with the graduate adviser. In addition, graduate students are encouraged to attend departmental colloquia, which cover a variety of topics and involve a number of guests and staff. Towards the end of the first year, a formal review of the student's progress and discussion of future plans are conducted by a three-member, first-year advisory committee. The student must declare a formal adviser during the meeting of the committee.

The second year of graduate study should begin to emphasize learning through in-depth work in the student's field of interest, through a focus on problem formation and through research experience. Usually, this year involves working closely with a single faculty member of a group of faculty and students. Emphasis should also be placed on the development of conceptual depth and skills, especially those applicable to the dissertation experience, and preparation for doctoral exams.

By the third year of study, students should be well on their way to completing most of the requirements of the graduate program. The aim is to be advanced to Ph.D. candidacy in order to proceed with doctoral research and writing. Doctoral examinations must be taken by the end of the third year of study. These exams focus on the breadth of knowledge in substantive sub-fields of geography and on a knowledge of methodological and philosophical concerns relevant to the student's interests. Normally, the specialty skills requirement should be completed before the doctoral exam is taken. A specialty skill includes some technique, method, or ability that is essential to the student's research experience (data collection or interpretation).

After the completion of the doctoral examinations, students submit a proposal for doctoral research that must be approved by the doctoral proposal committee. On completion of all requirements and approval of a draft of the Ph.D. dissertation, the student presents and defends the dissertation to the committee and other members of the school.

Residence and Credit Requirements

A three-year residence and 16 course credits beyond the B.A. degree are required for the Ph.D. program. Students entering with an M.A. in a field other than geography will be expected to complete essentially the three-year residence

program and at least 8 course credits as determined by the school. Students entering with an M.A. in geography from another institution must complete two and one-half years of residency and 8 course credits.

Teaching and Research Prerequisite

Teaching and research experiences at Clark are prerequisites to the Ph.D. degree.

DISTINCTIVE FEATURES AND SPECIALIZATION

The Graduate School of Geography is housed in modern quarters in the University's Academic Center. In the Geography Building, the Geography Workroom provides assigned study space for graduate students and houses the John K. Wright Reading Room. The reading room contains the personal library of Dr. Wright and regularly updated publications in the field of geography and subscriptions to geographic journals. Readings for geography coursework are held on reserve here. The *Libbey Lounge* serves as an activity room for graduate students.

The *Guy H. Burnham Map Library* is a multifaceted, special library staffed by a professional librarian. The collection consists of over 147,000 maps, charts, atlases, aerial photographs, and globes, and is a depository for maps and charts from federal agencies. Many support materials are on hand; others can be obtained through interlibrary cooperation.

The *Clark University Cartographic Service and Cartography Classrooms* are located in the lower level of the Academic Center. This area provides students with specialized workspace and a variety of up-to-date cartographic equipment, including a newly enlarged and well equipped graphic production darkroom, a stereo-facet plotter, a microcomputer-based automated cartography system, and a micro-VAX computer with a VAX Station I high resolution graphics workstation. The School of Geography fosters student and faculty exchange with other institutions, including institutions outside the field of geography and with geography departments elsewhere. Clark has long encouraged ties with foreign students and faculty.

Focus in recent years also has included links with development institutions in the United States and elsewhere by training prospective faculty and by facilitating programs.

GRADUATE SCHOOL OF GEOGRAPHY COURSE LISTING BY STREAM

NONSTREAM

- 011 *Survey of Geography*
- 141 *Research Methods in Geography*
- 146 *Political Geography*
- 174 *Themes in Classical Geographic Thought*
- 247 *Computer and Quantitative Methods in Geography: Intermediate*
- 297 *Geographic Information Systems*
- 314 *Research Design/Research Methods*
- 318 *Explanation in Geography*
- 320 *Seminar in Systems and Social Science*
- 368 *Colloquium: The Development of Western Geographic Thought*

CULTURAL/HUMANISTIC

- 017 *Introduction to Cultural Geography*
- 108 *World Population*
- 117 *Culture Landscape*

137	<i>Time and Space in Old and New England</i>
139	<i>Country and Culture</i>
140	<i>Cities and Culture: Non-American City</i>
142	<i>Cities and Culture: The American City</i>
156	<i>Images, Symbol, and Myth in the American West</i>
177	<i>Cultural Ecology in Arid Lands</i>
196	<i>Culture and Sport</i>
234	<i>Health and Disease in the American Habitat</i>
240	<i>The End of America: Los Angeles</i>
250	<i>Historical Geography of the Eastern United States</i>
253	<i>New England Landscape</i>
276	<i>Cultural Ecology in the Humid Tropics</i>
279	<i>American Landscape</i>
284	<i>Landscapes of the Middle East</i>
295	<i>Agriculture in Traditional Economies</i>
312	<i>Seminar: Agriculture and Development</i>
330	<i>Seminar in Cultural Ecology</i>
340	<i>Ecology and Prehistory</i>
367	<i>Ideas of Culture</i>
370	<i>Animal Agriculture</i>

PHYSICAL GEOGRAPHY OF HUMAN SYSTEMS

021	<i>Weather, Climate, and Vegetation</i>
022	<i>Introduction to Physical Geography: Landforms</i>
112	<i>Biogeography</i>
114	<i>Intermediate Geomorphology</i>
115	<i>Hydrology</i>
118	<i>Environmental Earth Science</i>
120	<i>Physical Environment of Cities</i>
122	<i>Meteorology</i>
124	<i>Soil Science</i>
135	<i>Climate and Society</i>
202	<i>Advanced Topics in Climatology</i>
204	<i>Watershed Ecology</i>
211	<i>Geomorphology of Humid Tropics</i>
212	<i>Quaternary Environments</i>
213	<i>Field Methods and Research</i>
215	<i>Fluvial Processes in Geomorphology</i>
216	<i>The Physical Environment of Arid Lands</i>
218	<i>Seminar in Physical Environment and Development</i>
220	<i>Agriculture and Grazing: A Physical Perspective</i>
260	<i>Physical Climatology</i>
300	<i>Advanced Topics in Physical Geography</i>
301	<i>Soil-Water-Plant Relationships</i>
362	<i>Seminar in Geomorphology</i>

URBAN/SOCIAL/PLANNING

018	<i>Introduction to Urban Geography</i>
162	<i>Urban Economic Geography</i>
170	<i>Urban Social Geography</i>
222	<i>Dynamics of City Growth</i>
245	<i>Senior Seminar in Human Geography</i>
254	<i>Urban Transportation: Problems and Prospects</i>
273	<i>Seminar in Urban Geography</i>
373	<i>Seminar in Urban Geography</i>

ENVIRONMENTAL AFFAIRS/MANAGEMENT

- 019 *Introduction to Environmental Management*
- 128 *Rural America: The Fight for Food*
- 155 *Environmental Management and Resource Development in China*
- 158 *Agricultural Resource Systems*
- 176 *Environment 198—*
- 205 *Environmental Protection Law*
- 210 *Socioenvironmental Impact Analysis*
- 214 *Seminar in River Basin Planning*
- 221 *Applied Surface Water Hydrology*
- 226 *How Safe is Safe Enough? Risk Assessment and Hazard Management*
- 228 *Management of Arid Land*
- 231 *Seminar: Politics and the Environment*
- 236 *Seminar: International Water Policy*
- 248 *Hazards of the Workplace*
- 251 *Problems in Environmental Management*
- 256 *Problems in Water Resources Planning*
- 257 *Theory of Multiobjective Resource Evaluation*
- 269 *Environment and Development in Africa*
- 271 *Groundwater Hydrology and Management*
- 275 *Citizen Participation: Theory and Application*
- 310 *Research Seminar in Development Geography*
- 348 *Research in Hazard Management*
- 351 *Resource Geography: Theory and Method*
- 353 *Research in Environmental Management*
- 369 *Environment and Development*

CARTOGRAPHY

- 180 *Field Mapping*
- 181 *Introduction to Cartography*
- 189 *Remote Sensing of the Environment*
- 217 *History of Cartography*
- 274 *Seminar in Cartographic Design*
- 292 *Cartographic Design and Production*
- 294 *Problems in Cartography*
- 296 *Remote Sensing Project Work*
- 298 *Introduction to Automated Cartography*

REGIONAL/INTERNATIONAL DEVELOPMENT/POLITICAL ECONOMY

- 015 *Introduction to Economic Geography*
- 027 *Geography of the Third World*
- 125 *Development Problems*
- 127 *Political Economy of Underdevelopment*
- 129 *Political Economy of Industrial Countries*
- 182 *Politics, People and Pollution*
- 228 *Management of Arid Land*
- 235 *Geography of the Capitalist World System*
- 258 *South Africa and Development in South Africa*
- 264 *Regional Economic and Social Development*
- 268 *Anthro-Geography*
- 289 *Problems in Political Economy of Development*
- 336 *Household Economic Behavior and the Geography of Development*
- 360 *Development Theories and Philosophies of Change*
- 365 *Seminar in Social and Economic Change*
- 369 *Environment and Development*

COURSES

011 SURVEY OF GEOGRAPHY/ Lecture, Discussion

A survey of major concepts in modern geography. Emphasis is placed on the various approaches to geographic research currently conducted in the Graduate School of Geography. Physical (climatology, soils, biogeography, and landform studies), cultural, historical, economic, urban, and social themes are developed. Designed primarily for freshmen and sophomores. A required course for geography majors.

Mr. Johnson, Mr. Bowden, Mr. Turner

Offered every year

015 INTRODUCTION TO ECONOMIC GEOGRAPHY/ Lecture

Theories of the geography of the production of human existence out of nature are presented. The course emphasizes contemporary economic, social, and environmental problems. These include over-population, environmental crises, world food problems, uneven economic development, the spatial movement of industry and jobs, and regional decline and unemployment. The course concludes by discussing the disappearance of unique regional economies and cultures and the emergence of a world capitalist economy, culture, and consciousness.

Mr. Peet, Mr. Karaska

Offered every year

017 INTRODUCTION TO CULTURAL GEOGRAPHY/ Lecture

An ecological and historical approach to the study of cultures and cultural change in a spatial context. A series of broad themes and problems are illustrated by case studies set mainly in North America. Among major themes considered are: adaptation to the "natural" environment; culture in prehistory; migration and the creation of cultural areas; the world views of primitive, traditional, and industrial culture; cultural landscape; and the cultural geography of the United States. One discussion section each week in addition to lectures.

Mr. Johnson

Offered every year

018 INTRODUCTION TO URBAN GEOGRAPHY/ Lecture, Laboratory

An introduction to the study of urban form, function, and problems. Themes pursued include the process of urbanization, migration, community development and governance, location of various urban utilities, the economic basis of cities, and the problems associated with growth.

Staff

Offered every year

019 INTRODUCTION TO ENVIRONMENTAL MANAGEMENT/ Lecture, Discussion

Designed to explore some of the basic concepts and problems involved in the study of natural resources and environmental management. This is accomplished by examining the physical principles, management practices, and environmental issues involved in three major cycles of the biosphere: the hydrologic cycle, carbon cycle, and nuclear fuel cycle. Solutions to major issues of waste disposal and resource development are examined from the perspectives of economic, political, and ecological theory.

Ms. Emel

Offered every year

021 WEATHER, CLIMATE AND VEGETATION/ Lecture, Lab

Examines the basic atmospheric and biospheric components of the "natural" environment. Develops an understanding of the processes affecting the attributes and distribution of the earth's atmospheric and biospheric patterns. The role of

human activity as an important agent in physical geography is included by looking at inadvertent climatic modification and the creation of the existing vegetation patterns.

Staff

Offered every year

022 INTRODUCTION TO PHYSICAL GEOGRAPHY: LANDFORMS/ Lecture, Lab

A basic inquiry into components of geomorphology. The course introduces basic concepts and processes affecting the earth's surface. The role of human activities as a critical landform agent is included.

Mr. Lewis

Offered every year

027 GEOGRAPHY OF THE THIRD WORLD/ Lecture, Discussion

This course introduces students to the geography of the Third World. The course provides an informational background for understanding the processes of underdevelopment and development. Simple theoretical ideas like mode of production, regional social formation, and the geography of consciousness are presented and used in geographical analyses of Third World regions. The course is suited to the student with little or no background or knowledge of the Third World but with a thirst to understand the conditions under which most of the world's people exist, and a commitment to changing these conditions.

Mr. Peet

Offered every year

101 INTRODUCTORY CASE STUDIES/ Lecture, Discussion

Introduces the student to technology assessment and environmental policy via a series of illustrative cases, drawn from population and food, land and water resources, energy conservation, pollution control, and arms control. Both writing and quantitative methods are emphasized so that students will become aware of the multidisciplinary approach needed in analysis of the cases. An integrative paper or presentation plays a major role in the course.

Ms. Brown, Staff

Offered every semester

108 WORLD POPULATION/ Lecture

Is the population of the world growing too fast? Will the world encounter an overshoot leading to doomsday? To address these questions requires an understanding of the nature of population growth and sociocultural responses to it. This course develops an understanding of this relationship through a mix of demography and population geography. World patterns of population distribution, history, and dynamics are explored, and the future of population problems is addressed.

Mr. Turner, Mr. Johnson

Offered every other year

110 COMPUTER AND QUANTITATIVE METHODS IN GEOGRAPHY: INTRODUCTION/ Lecture

An introduction to geographic analysis and the role of the computer in assisting this process. The course considers data sampling and descriptive and inferential statistical techniques for analyzing geographic data. Topics range from graphic techniques to tests of hypotheses, simple regression, and the analysis of variance. As an integral part of the course, students learn to use computer programs for statistical analysis, data graphing, and computer-assisted cartography. Although no prior exposure to computers or statistics is assumed, the course is suitable for students of all levels and is one for which graduate students may receive credit.

Mr. Eastman

Offered every year

112 BIOGEOGRAPHY/ Lecture

Past and present geographical distributions of plant and animal species are considered in relation to continental drift, species interactions, dispersal strategies, biological evolution, and human activity. Island biogeography and the biogeography of tropical vascular plants are emphasized.

Mr. Herwitz

Offered every year

114 INTERMEDIATE GEOMORPHOLOGY/ Lecture

The theory of plate tectonics is explored in relation to the uplift of mountains, tectonics, and volcanism. The gradual wearing down of the earth's surface by hydrological processes is emphasized in the latter part of the course. Prerequisite: Geography 022 or Geology 100 or permission of instructor.

Mr. Lewis

Offered every year

115 HYDROLOGY/ Lecture

Provides an overview of the hydrologic cycle and its major components including precipitation, evapotranspiration, soil moisture, surface water runoff, and groundwater flow. The course focuses upon the role of water as a unifying concept in environmental science. Prerequisite: Geography 021 or 022 preferred but not required.

Staff

Offered every year

117 CULTURE LANDSCAPE/ Lecture

Examines the processes and values that shape the human environment. The fundamental premise is that every culture leaves a record of its presence in its material landscape and that this landscape record can be understood and "read" by the informed observer. Because landscape is a product of culture as well as of nature, it can best be understood comparatively using both an insider's (native's) and outsider's perspective. Insights are gained by comparing familiar landscapes with those produced by other cultures. For this reason, the course studies selected Middle Eastern, Indian, Chinese and European landscapes in addition to the regional landscapes of North America. Artistic, literary, historical, and ecological perspectives are brought to bear on the interpretation of ordinary and elite landscapes of fact and symbol.

Mr. Johnson

Offered every other year

118 ENVIRONMENTAL EARTH SCIENCE/ Lecture

Examination of the basic concepts and processes within the earth sciences, relative to the evaluation of risks and decisions on future policies of land use and resource utilization. The emphasis is on aspects of the environment of particular interest to geographers, geologists, and planners. Prerequisite: Geography 022 or Geology 100 or permission of instructor.

Staff

Offered every other year

120 PHYSICAL ENVIRONMENT OF CITIES/ Lecture

Provides an overview of the physical geography of cities. The class focuses upon the impact of human settlement on the climate, atmospheric quality, hydrology, vegetation, wildlife, earth surface processes, and environmental hazards of cities. Appropriate for nonmajors; no prerequisites.

Staff

Offered every other year

122 METEOROLOGY/ Lecture, Lab

This introduction to meteorology stresses the concepts and principles necessary in understanding the atmospheric system and the regional climatologies produced by that system. Intended for physical geography students and others wanting

a complete background (at an introductory level) to meteorology. Lab required. Prerequisite: Geography 021 or permission of instructor.

Staff

Offered every year

124 SOIL SCIENCE/ Lecture, Fieldwork

Designed for students interested in physical geography, agriculture, environmental management, and land use planning. Topics covered include soil genesis, chemistry, and physics. Specific management problems, including erosion and pollution, provide cases for understanding general principles. Fieldwork provides opportunities for students to learn basic sampling and monitoring techniques. No prerequisite, although chemistry would be useful.

Ms. Emel

Offered every other year

125 DEVELOPMENT PROBLEMS/ Lecture, Discussion

Introduces students to the major issues and debates in the field of international development by addressing a variety of concerns relevant to the Third World, including colonialism, development and underdevelopment, growth and equity, trade and aid, North-South relations, emergence of class, and political ideologies. The course focuses on specific problems of food, population, and resources. Case materials are drawn from a number of countries including India, China, Kenya, Tanzania, Sudan, Mexico, Brazil, and Bangladesh.

Ms. Thomas

Offered every year

127 POLITICAL ECONOMY OF UNDERDEVELOPMENT/ Lecture

Do conventional explanations of underdevelopment strike you as false and unconvincing? A powerful and refreshing alternative perspective exists in Marxist and neo-Marxist theories of social change. This course reviews the main currents within this rich stream including theories of dependency, imperialism, accumulation world systems, unequal exchange, and mode of production. Marxist concepts are used to examine the international role of capital, multinational corporations, and regional decline. Finally, the course presents alternative models of socialist development.

Mr. Peet

Offered every year

128 RURAL AMERICA: THE FIGHT FOR FOOD/ Lecture, Discussion

Introduces students to agriculture in the United States. Rural America is in distress; farmers are losing farms due to overproduction; yet, part of the world starves. The United States has one of the world's highest yielding farming systems, but at what environmental cost? Is the family farm a myth of urban America? As they explore these and other current issues, students will be introduced to the scientific, economic, and political bases of the U.S. agricultural production system. The historical development of U.S. agriculture also is examined.

Ms. Emel

Offered every other year

129 POLITICAL ECONOMY OF INDUSTRIAL COUNTRIES/ Lecture

The advanced capitalist countries are undergoing rapid economic change including an industrial devolution as remarkable as the industrial revolution of the nineteenth century. This course examines the effects of economic change in the United States, Western Europe, Japan, East Asia, and Latin America in the context of theories of global development. Economic and social problems, such as the destruction of employment, unemployment, and regional and community collapse, are emphasized. The course also examines the contradictions of regional economic advance in high technology regions, such as New England, the Silicon Valley, and the technopolis of Japan. Theories and practices of regional develop-

ment policy bring the course to a pragmatic conclusion.

Mr. Peet

Offered every year

135 CLIMATE AND SOCIETY/ Lecture, Discussion

An examination of current climate-related issues of interest to society. Topics are chosen from such subjects as air pollution, acid rain, carbon dioxide and the greenhouse effect, tropical deforestation, desertification, drought, nuclear winter, climatic hazards, alternative energy, climatic variability, the El Niño phenomenon, architecture and climate, climate and urban design, and/or others. Appropriate for nonmajors.

Staff

Offered every other year

137 TIME AND SPACE IN OLD AND NEW ENGLAND/ Lecture

Uses cases from old and New England to demonstrate the skills, methods, and sources of cultural, historical, and humanistic geography in the towns and fields of New England and in texts of both Englands. Dating techniques; prehistoric chronology; estimating past populations; toponymy, linguistic and lexical evidence; archaeology and ground itself; archival and literary evidence; aerial photography; vernacular and high style architecture; analysis of art and literary texts. Skills course for geography majors in *cultural stream*.

Mr. Bowden, Staff

Offered every other year

139 COUNTRY AND CULTURE/ Lecture

The landscape can be read! Be it a vast tropical rainforest with an occasional clearing or an intensively cultivated river valley in New England, the rural landscape is the product of interaction between place (environment) and people (culture). This course traces the evolution of rural landscapes through time from early hunter/gatherers to modern suburban encroachment on rural areas. Emphasis is placed on ecological principles that help explain the techno-cultural modification of rural places.

Mr. Johnson, Mr. Turner

Offered every other year

140 CITIES AND CULTURE: NON-AMERICAN CITY/ Lecture

The course develops a model of the cultural role of cities and above all of cultural capitals to effect cultural change and to maintain or destroy cultural stability. For each major civilization, the geographic and symbolic imprint of culture is described and explained in terms of the cosmomagical in the major civilizations: Egypt, Mesopotamia, China, India, Meso-America, Cambodia, Greece, and Rome. The notion of the traditional preindustrial, precapitalist, and protocapitalist city is explored in Islam and medieval Europe. The idea of cultural creativity is explored in detailed case studies of London, Edinburgh, Manchester, and Vienna.

Mr. Bowden

Offered every year

141 RESEARCH METHODS IN GEOGRAPHY/ Lecture, Discussion

Focuses upon the ways in which social science research is conducted and emphasizes primarily applied research in a problem-solving context. Involves the students in the variety of problems, methodological strategies, and analytical techniques characteristic of current geographical research. Topics include defining a research problem, measurement, sampling, questionnaire design, and modeling.

Ms. Hanson

Offered every year

142 CITIES AND CULTURE: THE AMERICAN CITY/ Lecture and Field Trip

The course focuses on the development of distinct subcultures in America, and on the cultural capitals of the country. Emphasis is on the expression of culture

in space and on the agents of cultural change and stability. Detailed studies of cities that have at one time been cultural capitals in America—Boston, Philadelphia, New York City, Chicago, San Francisco, and Los Angeles—consider the origins and effects of this role on each city's structure. The same process is studied in distinctive regional cultural capitals—Charleston, Newport, Salt Lake City, Santa Fe, and New Orleans.

Mr. Bowden

Offered every year

146 POLITICAL GEOGRAPHY/ Lecture, Discussion

Analysis of the interplay between geography and politics, treating such topics as the territorial organization of political systems, decentralization, districting, spatial conflict, electoral geography, delivery of public services, environmental politics.

Mr. Kasperson

Offered every other year

155 ENVIRONMENTAL MANAGEMENT AND RESOURCE DEVELOPMENT IN CHINA/ Lecture

A survey of the world's most important and complex set of environmental and resource problems: environmental management and resource development in China, the home of one-quarter of the earth's population. Land and water, agricultural resources, energy and pollution, urban areas, human resources, education and technology, natural and historic areas. Environmental and resource issues in the larger context of Chinese civilization. Prospects for the future.

Mr. Shakow, Staff

Offered every other year

156 IMAGES, SYMBOL, AND MYTH IN THE AMERICAN WEST/ Lecture, Discussion

From the first, Americans made the West what they wanted it to be: Garden of the World, Eldorado, Cibola, Passage to India, Great American Desert, Great Prairie, Garden in the Grassland. A westering people invested this land with heroes, hunters, horse-riding Indians, trappers, scouts, cowboys, oil magnates, land boomers, and movie tycoons. The West presents a kaleidoscope of images of both outsiders and insiders, and this course considers the origins and changes in these images, their effects on behavior, and their imprint on the land. Emphasis throughout is on the methods and skills of those concerned with reconstructing the geographical knowledge (geosophy) of people of different backgrounds, roles, regions, and times.

Mr. Bowden

Offered every other year

158 AGRICULTURAL RESOURCE SYSTEMS/ Lecture

Examination of agricultural systems, their processes, problems, and prospects; in part, the course focuses on issues of agricultural decision making, culture and agriculture, food production, distribution and hunger, technology and resource requirements, environmental impacts, and alternative agricultural futures. The course draws upon case studies in North America, Asia, and Latin America.

Staff

Offered every other year

162 URBAN ECONOMIC GEOGRAPHY/ Lecture

Focuses on the system of cities, the dynamics of interurban and interregional space economies, and the role of cities in regional development. Course also focuses on changing patterns of urban land use, theories of urban land use, and data requirements and methods for handling problems in urban land use planning.

Mr. Karaska

Offered periodically

170 URBAN SOCIAL GEOGRAPHY/ Lecture, Discussion

Focuses on the definition and importance of social areas within cities, patterns and processes of residential segregation, the role of the neighborhood in urban life, and the functioning of the urban housing market. Also examines urban planning approaches to solving housing and neighborhood problems.

Staff

Offered every year

174 THEMES IN CLASSICAL GEOGRAPHIC THOUGHT/ Discussion

Ecology, ecumene, environment, exploration: These four themes are the intellectual legacy to modern geography of the ancient Greeks and other Mediterranean peoples. Such geographically related topics as the voyage of Odysseus, the Atlantis myth, the concept of sacred space, the measurement of the earth, the relations of nature and culture, the design of the environment, the idea of the habitable world, the relations of climate and health, and the exploration of the "barbarian" world are examined both in the accounts of ancient Greek and Roman writers (in translation) and in later scholarly elaborations. Open to all those interested in the continuing significance of the thought of the ancient Mediterranean world.

Mr. Koelsch

Offered every other year

176 ENVIRONMENT/198—/Lecture, Discussion

An assessment of major environmental issues, both national and global in nature, confronting human society in the current year. Particular attention to problems requiring governmental action: rapid population growth, hazardous chemical wastes, long-term planning, world water shortages. The interplay between environmental change and public policy is stressed. Intended for those desiring introductory or general knowledge.

Mr. Kasperson

Offered every year

177 CULTURAL ECOLOGY IN ARID LANDS/ Lecture, Discussion

Drylands are risky and often inhospitable places in which to live. Yet people choose to occupy such places and to wrest a living from sparse and scattered resources. Those farmers, herders, hunters, and urban dwellers who are successful have coping strategies for dealing with drought, desertification, and environmental change. Comparison of these strategies in both developing and industrialized societies identifies obstacles to and opportunities for successful management of drylands in support of a growing population.

Mr. Johnson

Offered periodically

180 FIELD MAPPING/ Lecture, Laboratory

A basic introduction to the collection of field data for the making of maps. It covers the fundamentals of field survey, including basic instrumentation, and the assembly of both qualitative and quantitative material for practical cartography. Project work is involved.

Mr. Steward

Offered every year

181 INTRODUCTION TO CARTOGRAPHY/ Lecture, Laboratory

An introduction to the fundamental principles underlying the graphic representation and geographic description of earth phenomena. The examination ranges from concepts of space and spatial representation to descriptive techniques and the perceptual basis for graphic communication. The laboratory exercises allow a "hands-on" exploration of both manual and automated map production and analysis techniques.

Mr. Eastman, Mr. Steward

Offered every year

182 POLITICS, PEOPLE, AND POLLUTION/ Lecture, Discussion

Environmental problems and issues arise from economic development processes in both the industrialized and developing countries. What are the facts, and what are the myths in a consideration of environment and development? How do we establish policies for dealing with these problems? What are the processes by which governments make decisions addressing complex environmental/development issues here and in distant parts of the world? This course offers students an opportunity to examine the relations between environment and development in the context of developing and industrialized societies.

Ms. Thomas, Mr. Schwarz

Offered every other year

189 REMOTE SENSING OF THE ENVIRONMENT/ Lecture, Laboratory

Offers a broad introduction to one of the most powerful tools now being developed for surveying geographical phenomena. Covers the use of remotely sensed data, such as air photos and a variety of satellite imagery, to provide answers to many of the problems about our physical and human environment.

Mr. Steward

Offered every year

196 CULTURE AND SPORT/ Discussion

Readings in humanities "texts," meetings focused on film, and frameworks from the social sciences are used to explore a number of American games, sports (and their English progenitors) as expressions of American history, character, values, environment, self-image, mentality, economic ethos, and institutions. Themes are: (1) the relation between the character and structure of the games and their success among different groups of Americans; (2) the timing of adoption of the games; (3) explanations for the transformation of the games from British and early forms; (4) deviation of professional and amateur variants; (5) scale and nature of sport as a business. Athletics, boxing, cricket, baseball, soccer, rugby, football, basketball, hockey, and tennis, among others, are considered. Classes meet weekly. The class period is extended on alternate weeks for special events (e.g., films).

Mr. Bowden

Offered every other year

202 ADVANCED TOPICS IN CLIMATOLOGY/ Lecture, Seminar

Examines a selected topic in climatology, depending upon the interests of the students enrolled. Topics are chosen from the areas of microclimatology, urban climatology and air pollution, climatic change and climate variability, carbon dioxide and the greenhouse effect, and climate-crop yield-water use relations. Prerequisite: Geography 122 or Geography 260 or permission of instructor.

Staff

Offered every year

204 WATERSHED ECOLOGY/ Seminar

Advanced seminar examining current scientific literature on the biogeochemistry of contrasting forested ecosystems. Topics covered include the inputs, outputs, and internal transfers of energy and nutrients in north temperate hardwood forests, tropical rainforests, cloud forests, eucalypt woodlands, and baldcypress swamps. The Hubbard Brook ecosystem study is considered in detail with a field trip to the Hubbard Brook experimental watershed in the White Mountains.

Mr. Herwitz, Mr. Livdahl

Offered every year

205 ENVIRONMENTAL PROTECTION LAW/ Lecture, Discussion

A free-wheeling discussion of pollution control in the real world, its legal, institutional, and political framework. Federal, state, and local laws and their scientific basis; agency practice and procedure; public litigation and private "citizen suits;" selecting theories and remedies, both civil and criminal; tactics and strategies; citizen "watchdog" groups; corporate and media responsibility; economy ver-

sus ecology; old tools, new tools, potential for change. Includes reading in multilithed materials—statutes, regulations, court documents, case decisions, news accounts, and journal articles. Informal student advocacy panels to assure balanced presentation of issues.

Staff

Offered every other year

210 SOCIOENVIRONMENTAL IMPACT ANALYSIS/ Lecture, Discussion

Provides an overview of the theories, methods, and models used in assessing the social and environmental effects of planned development. Attention is given to both empirical and ethical issues and to developed and developing world contexts. Cases are analyzed in terms of the available policy and institutional means (such as social impact statements), as well as the critical literature on the subject. The goal is to equip the student with both analytical skills and a critical perspective necessary to evaluate the social aspects of major projects and facilities.

Mr. Kasperson

Offered every other year

211 GEOMORPHOLOGY OF HUMID TROPICS/ Lecture, Discussion

The humid tropics—home of the rainforest, dry forest, and savanna—are areas of special interest to physical geographers. Deep weathering of rocks, rapid soil erosion when the forest or grasses are removed, great rivers in the tropics, the devastating impact of human intervention are among the topics explored. Prerequisite: Geography or Geology 114 or permission of instructor.

Mr. Lewis

Offered every other year

212 QUATERNARY ENVIRONMENTS/ Lecture

A consideration of the theories and methods used in reconstructing paleoenvironments over the last two million years. Topics covered include carbon-14 dating, stratigraphic correlation, glacial geomorphology, vertebrate paleontology, palynology, and dendrochronology. The Quaternary geomorphology of New England is emphasized in field trips. Prerequisite: Geology 100 or Geography 022 or permission of instructor.

Mr. Herwitz

Offered periodically

213 FIELD METHODS AND RESEARCH/ Senior Project, Seminar

Methods of measuring and monitoring the physical environment. Students have an opportunity to conduct field research and gain experience acquiring data in the areas of meteorology, surface and ground water hydrology, geomorphology, pedology, and forest ecology. Field and laboratory research leads to the preparation of a formal article that conforms to the specifications of a scientific journal. Prerequisite: permission of instructor.

Mr. Herwitz

Offered every year

214 SEMINAR IN RIVER BASIN PLANNING/ Seminar

Concentrates on one river basin and the studies made and plans prepared to develop this river basin. Students work independently on specific sections of the case under consideration. Seminar sessions give participants the opportunity to present their independent work and discuss it in a broader context. Readings, discussions, and research focus on objectives, techniques, and results and relate them to the appropriate economic and social values.

Mr. Schwarz

Offered every other year

215 FLUVIAL PROCESSES IN GEOMORPHOLOGY/ Lecture, Discussion

Focuses on the relations between hydrology and geomorphology. The basic properties of hydraulic geometry, erosion, and deposition are explored. Prerequisite: Geography or Geology 114 or permission of instructor.

Mr. Lewis, Staff

Offered every other year

216 THE PHYSICAL ENVIRONMENT OF ARID LANDS/ Lecture, Discussion

Presents an analysis of the landscapes and atmospheric environment of arid areas of the earth and the dynamics under which they operate. The focus is on climate and related geomorphic processes. The course emphasizes the arid Southwest of the United States and the African Sahel. Prerequisite: Geography 022 or Geology 100 or permission of instructor.

Mr. Lewis

Offered every other year

217 HISTORY OF CARTOGRAPHY/ Lecture

A basic survey of the history of mapping until about 1900. Topics include the methodological basis of investigations into the subject; maps of primitive peoples; the classical, medieval and Renaissance periods; the rise of national surveys; the relationship of mapping to exploration; and the cartography of North America.

Mr. Steward

Offered every year

218 SEMINAR IN PHYSICAL ENVIRONMENT AND DEVELOPMENT/ Seminar

The world is changing more rapidly than at any time in history. This course reviews the patterns of change in the Third World, examines the role of environment and resource management in development, and allows students to develop their own in-depth case studies. Permission of instructor required.

Mr. Lewis

Offered every other year

220 AGRICULTURE AND GRAZING: A PHYSICAL PERSPECTIVE/ Lecture, Discussion

Agricultural and grazing practices with their relations to the environment are examined. Various physical and cultural/economic situations including the developed and developing world are the focus for the inquiry. Permission of instructor required.

Mr. Lewis

Offered periodically

221 APPLIED SURFACE WATER HYDROLOGY/ Lecture

Focuses on practical applications of hydrology for water resources management. Topics explored include rainfall/runoff relationship, hydrograph analyses, frequency studies of floods and droughts, reservoir operation, and flood routing. Both the techniques and the application to problems such as water supply and flood control are covered. Prerequisite: Geography 021 and 022 or 115 or permission of instructor.

Mr. Schwarz, Staff

Offered every other year

222 DYNAMICS OF CITY GROWTH/ Lecture, Discussion

Historical survey of the internal structure and external relations of urban areas. Stress falls on North American cities through the nineteenth century, with reference to European antecedents. Critical discussion of relevant theories and models of city growth is included.

Staff

Offered every other year

226 HOW SAFE IS SAFE ENOUGH?: RISK ASSESSMENT AND HAZARD MANAGEMENT/ Lecture, Discussion

For advanced students, an introduction to the theory and methods of risk assessment and the management of environmental hazards. Case study material is drawn from concurrent research including natural hazards, hazards of consumer products, energy production, toxic chemicals, and transportation.

Mr. Kasperson

Offered every other year

228 MANAGEMENT OF ARID LAND/ Lecture, Seminar

The drylands of the world present special development problems. Peculiarly prone to degradation, these regions face the difficult task of providing support to a rapidly growing population. Viewed in a historical perspective, the demography, social and livelihood systems, behavioral characteristics, and physical constraints of dryland ecosystems are analyzed. Special attention is paid to evaluating the management strategies currently employed in their use, identifying the obstacles constraining their growth, and assessing their future development potential.

Mr. Johnson

Offered every other year

231 POLITICS AND THE ENVIRONMENT/ Seminar

For the student with professional career or advanced study objectives. The seminar is organized around current research themes or selected policy issues. Each of these is treated in a two-week period which includes a state-of-the-art assessment, case applications, and a short student position paper on an assigned question. Representative issues include the environmental movement, models of the policy process, mediation of environmental conflicts, the politics of risk, and the role of the mass media. Permission of instructor required.

Mr. Kasperson

Offered every other year

234 HEALTH AND DISEASE IN THE AMERICAN HABITAT/ Discussion

Based on readings drawn from medical and historical geography, biological science, and the history of American medicine and public health, this course takes a synoptic view of concepts and practices concerning health and disease as a form of environmental cognition and management. Discussion topics range from the changing disease environments of early New World migrants and inhabitants to present-day concerns over environmental health hazards, but emphasis is on our societal interactions with urban-industrial disease environments in the last hundred years and their intellectual consequences.

Mr. Koelsch

Offered every year

235 GEOGRAPHY OF THE CAPITALIST WORLD SYSTEM/ Seminar

Reviews world systems theories, crucial phases in the development of the capitalist world system, history of center-periphery relations, underdevelopment, multinational corporations and the new international division of labor, the geography of consciousness, and spread of American culture. The course emphasizes a particular geographic problem of current interest each time it is offered.

Mr. Peet

Offered every other year

236 SEMINAR: INTERNATIONAL WATER POLICY/ Lecture, Seminar

This course deals with the law and management of (1) national water resources (from the perspective of several nations including the United States), (2) international river systems and groundwater basins, and (3) oceans and seas. Within the context of each of the three topical areas, we define the "water problems(s)" with which policy and administrative managements must deal; analyze existing programs in terms of their ability to respond to the "water problems(s)," and consider conceptual guidelines for improving policy and institutions.

Ms. Emel

Offered every other year

240 THE END OF AMERICA: LOS ANGELES/ Lecture, Discussion

The modern city reflects the values and forces that have shaped Western culture in its westward course. In the last century the history of Los Angeles—the western end of American space—embodies better than that of any other city the polemic between traditional and technological notions of the modern city. It provides a unique, possibly the ultimate, model for the examination of the American cultural spirit, perhaps even of the end of that spirit. This course is designed to explore the changing notions of the city and the American attitude toward the culture of cities through close examination of the history, geography, literature, and film associated with Los Angeles.

Mr. Bowden

Offered every other year

245 SENIOR SEMINAR IN HUMAN GEOGRAPHY/ Seminar

An examination of major topics, problems, and methodological issues in contemporary human geography which emphasizes original research. The senior seminar in human geography.

Ms. Hanson

Offered every year

247 COMPUTER AND QUANTITATIVE METHODS IN GEOGRAPHY: INTERMEDIATE/ Lecture, Laboratory

Focuses on the following topics: multiple correlation and regression (including the analysis of residuals); analysis of covariance, dummy variables, and other applications of the linear model; multivariate extensions of analysis of variance. In the labs associated with this course, students work with the BMDP and SPSS software packages and are introduced to computer programming. Prerequisite: Geography 110.

Staff

Offered periodically

248 HAZARDS OF THE WORKPLACE/ Lecture, Discussion

Surveys the trends and extent of occupational hazards in the United States and inquires into the adequacy of current data bases, public policy, and managerial efforts. Attention is given to the performance of corporations, OSHA, labor unions, workers' compensation, and approaches to worker protection. Some cross-national comparisons are included. Alternatives to current managerial approaches are defined and discussed.

Mr. Kasperson

Offered every other year

250 HISTORICAL GEOGRAPHY OF THE EASTERN UNITED STATES/ Lecture, Seminar

Surveys the evolution of the continental United States east of the Mississippi River from the Age of Discovery until about 1900. Elements of cultural, economic, social, and political geography are integrated into a comprehensive historical framework. Appraisals of American society and culture, and of regional and national character, are evaluated against that background.

Staff

Offered periodically

251 PROBLEMS IN ENVIRONMENTAL MANAGEMENT (SENIOR SEMINAR)/ Lecture, Discussion

An examination of current approaches and methods in environmental management, with emphasis upon theories and skills needed for applied work in the field. An advanced undergraduate seminar intended particularly for geography

seniors to provide an integration of skills and concepts in environmental geography through the examination of concrete management problems. Topics include history of environmental geography, environmental data bases, environmental and social impact assessment, writing research proposals, decision-making aids.

Staff

Offered every year

253 NEW ENGLAND LANDSCAPE/ Seminar, Field Trips

The course is introduced by an examination of the idea of landscape within the geographic endeavor, followed by a history of landscape studies in New England. Substantive field and library work focuses on the house and buildings, fences, walls, land use and settlement patterns as they hang together to give character and distinctiveness, first, to the nine subcultural regions of coastal and valley New England settled in the "First Period" (to 1725); second, to the areas of upland New England where the Yankee "folk-housing landscape" solution covered the lands in the eighteenth century. An assessment of the landscape impact of commercial villages and greens and of the mills and mill villages, created 1790-1852, completes the course. Five half-day field trips to the Central Uplands and to the Connecticut Valley and two three-day field trips: one to southern Rhode Island, the Old Colony and the Cape; another to the North Shore, eastern New Hampshire, and southern Maine. Motel accommodations and food on these weekend trips cost \$100-130 total.

Mr. Bowden

Offered every year

254 URBAN TRANSPORTATION: PROBLEMS AND PROSPECTS/ Lecture, Discussion

What are the dimensions of the urban transportation problem? How can we analyze the problem so as to propose policies that might help to solve it? Topics include transportation and land use, transportation and energy, the car vs. public transit, and transportation and equity issues. We examine aggregate and disaggregate approaches to analyzing patterns of spatial behavior and evaluate the relative effectiveness of these approaches in posing solutions to urban transportation problems.

Ms. Hanson

Offered every other year

256 PROBLEMS IN WATER RESOURCES PLANNING (SENIOR SEMINAR)/ Seminar

Water resources planning techniques and water resources engineering. Economic, social, and environmental topics are reviewed and applied in a realistic planning exercise. Students, working in groups, prepare for a selected region or river basin, a preliminary planning document that could be used as a guide for future detailed planning. Emphasis is on the preparation and the written and oral presentation of the planning document in a professional manner that would be acceptable in the real world. Prerequisite: a 200-level course in environmental assessment; physical geography; economics; or environment, technology, and society, or permission of instructor.

Mr. Schwarz, Staff

Offered every other year

257 THEORY OF MULTI-OBJECTIVE RESOURCE EVALUATION/ Lecture

Introduction to the theory of multi-objective resource evaluation. Presents the full range of criteria required for the economic, social, and environmental evaluation of resource programs and projects, together with selected applications.

Mr. Major, Staff

Offered periodically

258 SOUTH AFRICA AND DEVELOPMENT IN SOUTHERN

AFRICA/ Seminar

Examines problems of development in the Southern Africa region with particular reference to the SADC countries and the impact of South Africa on political and socioeconomic change.

Ms. Seidman

Offered periodically

260 PHYSICAL CLIMATOLOGY/ Lecture

This course provides an in-depth background to physical climatology. Basic principles of energy transfer occurring at the earth's surface are developed, including solar radiation, longwave radiation, convection, conduction, and evapotranspiration. These are then applied to a series of environmental systems relevant to humans, including agricultural crops, natural vegetation, snow and ice, and urban climates. Prerequisite: Geography 122 or permission of instructor.

Staff

Offered every year

264 REGIONAL ECONOMIC AND SOCIAL DEVELOPMENT/ Seminar

Regional development and underdevelopment theories are applied to the advanced capitalist countries. The course focuses on such issues as Frostbelt-Sunbelt competition, the underdevelopment and restructuring of old industrial regions, economic and social change in the New England region, and the role of the state in the process of regional economic development. Case studies of industrial decline and industrial growth—high technology industries—are presented.

Mr. Peet

Offered every other year

268 ANTHROGEOGRAPHY/ Seminar

Theories of the relations between the natural environment and human nature, culture, and society. The works of Darwin, Spencer, Kropotkin, Marx, Semple, and Wittfogel are examined as precursors to modern theories of human-environmental relations.

Mr. Peet

Offered every other year

269 ENVIRONMENT AND DEVELOPMENT IN AFRICA/ Lecture, Discussion

Efforts to promote economic growth in sub-Saharan Africa have resulted in mixed outcomes. Few successful development projects exist, and the difficulties posed by environmental constraints and human impacts on environment remain considerable. The complex relationship between nature, society, and technology in the use of Africa's resources is the focus of the course.

Mr. Johnson

Offered every other year

271 GROUNDWATER HYDROLOGY AND MANAGEMENT/ Lecture, Discussion

An introduction to both the geological and hydrological factors controlling the occurrence and development of groundwater and the methods and impacts of groundwater management.

Ms. Emel

Offered every year

273 SEMINAR IN URBAN GEOGRAPHY

Through readings and discussion, this seminar focuses on major research problems in urban geography. Each student formulates a research problem and designs and executes a research project. Prerequisites: Geography 141 and 110.

Ms. Hanson

Offered every other year

274 SEMINAR IN CARTOGRAPHIC DESIGN

Explores the common ground between graphic design/fine arts and cartography/geography in the area of map design. Draws upon a variety of approaches and methodologies, seeking points of consensus and clarity that can aid in both the understanding and making of maps. Capitalizes upon the different skills and interests of the professors involved and brings students into an active seminar exchange. Aspects covered include typography, color, psychophysical and cognitive approaches, aesthetics, communication and design theory, and the ideas of metacartography.

Mr. Steward, Mr. Eastman

Offered every year

275 CITIZEN PARTICIPATION: THEORY AND APPLICATION/

Lecture, Discussion

Erosion of public confidence in the institutions and professionals charged with managing societal affairs has brought proposals that decision making be conducted more openly and with fuller citizen participation. This course explores a range of issues surrounding this theme. Major theories regarding the nature, goals, and forms of participation are examined and contemporary experience with participatory programs is reviewed.

Mr. Kasperson

Offered every other year

276 CULTURAL ECOLOGY IN THE HUMID TROPICS/ Lecture, Seminar

A mystique exists about the humid tropics. Mid-latitude biases have led to inaccurate assessments of the composition of these wet, hot lands, of traditional uses of them, and of their suitability, both past and present, to support large populations and high living standards. These issues are examined by focusing on the range of environments and livelihood strategies that have existed or could exist in this region.

Mr. Turner

Offered periodically

279 AMERICAN LANDSCAPE/ Lecture

Every landscape contains a record of the history, ecology, values, and images of the culture(s) that produced it. Those messages are waiting to be read and interpreted by the informed observer. The American landscape encapsulates the American encounter with environment, the emergence of distinctive settlement and livelihood patterns, the dynamic tension between regional and national landscapes, and changing cultural attitudes toward the use and abuse of American space. An interdisciplinary approach featuring geographic, historical, literary, and artistic sources broadens this analysis of the contemporary landscape. Field trips required.

Mr. Johnson

Offered every other year

284 LANDSCAPES OF THE MIDDLE EAST/ Lecture, Seminar

A diverse array of landscapes, economies, and cultures comprise the Middle Eastern culture realm. The modernization and transformation of the traditional Islamic and non-Islamic patterns of life and livelihood in the Middle Eastern cultural mosaic are the focus of this course. Literature and ethnographic description supplement geographic analysis.

Mr. Johnson

Offered every other year

289 PROBLEMS IN POLITICAL ECONOMY OF DEVELOPMENT (SENIOR SEMINAR)/ Seminar

Problems of underdevelopment are examined via class discussions and student presentations. Typical problems covered include the industrialization of East Asia, the effects on women of underdevelopment, and regional development policy in Southern Africa.

Mr. Peet

Offered every year

292 CARTOGRAPHIC DESIGN AND PRODUCTION/ Lecture, Laboratory

A course concerned with the design and production of full-color printed maps. The principles and procedures of offset lithographic printing, photomechanical production (e.g. scribing), phototypesetting, process photography, process color and nonprinting reprographic techniques are discussed. In the laboratory sections, students compile, design, and produce a full-color map to a color proof stage. Prerequisite: Geography 181 or permission of instructor.

Mr. Eastman

Offered every year

294 PROBLEMS IN CARTOGRAPHY/ Seminar

An examination of perennial and new problems in cartography ranging from considerations of a philosophical and historical nature to the concerns of contemporary mapping. Prerequisite: permission of instructor.

Mr. Steward, Mr. Eastman

Offered every year

295 AGRICULTURE IN TRADITIONAL ECONOMIES/ Lecture, Seminar

Consumption and commodity agriculture in the non-Western world is explored. Emphasis is placed on the economic behavior and livelihood strategies employed in these economies and on the theories of agricultural change.

Mr. Turner

Offered periodically

296 REMOTE SENSING PROJECT WORK/ Lecture, Laboratory

A more detailed consideration of the use of remote sensing for environmental analysis, particularly land use. Includes a class remote sensing project and fieldwork.

Mr. Steward, Mr. Eastman

Offered every year

297 GEOGRAPHIC INFORMATION SYSTEMS/ Lecture, Laboratory

A broad introduction to computer-assisted systems for geographic display and analysis. Lectures stress the fundamental logic and scope of problem solving using each of the two main types of systems (grid and polygon-based). Laboratory exercises allow students to become familiar with four mainframe and microcomputer GIS software systems currently operated by the Graduate School of Geography. Although the course is "computer-oriented," no programming is involved.

Mr. Eastman

Offered every year

298 INTRODUCTION TO AUTOMATED CARTOGRAPHY/ Lecture

A "hands-on" introduction to the fundamentals of automated cartography. Using color-graphics microcomputers and the BASIC computer language, the course explores the potential and reality of computer-assisted geographic display and analysis. Topics covered include programming logic for computer graphics, data structures for geographic information, thematic and general reference mapping, and geographic information systems. Programming is taught as an integral part of the course, which requires no previous computer background. Prerequisite: Geography 181 or permission of instructor.

Mr. Eastman

Offered every year

300 ADVANCED TOPICS IN PHYSICAL GEOGRAPHY/ Seminar

Theories and concepts in specific areas of physical geography are examined at an advanced graduate level, in the context of a research seminar. Specific topics are focused on research interests of the faculty and students taking the course. Prerequisite: permission of instructor.

Mr. Lewis, Ms. Emel, Mr. Herwitz

Offered periodically

301 SOIL-WATER-PLANT RELATIONSHIPS/ Seminar

Advanced seminar examining the current scientific literature on the process of transpiration in plants under contrasting environmental conditions ranging from deserts to the humid tropics. Issues relating to the movement and availability of soil water, water uptake and water movement in plants, productivity-transpiration relationships, and methods of measuring transpiration in the field are considered in detail.

Mr. Herwitz, Ms. Emel

Offered periodically

310 RESEARCH SEMINAR IN DEVELOPMENT GEOGRAPHY

Designed for thesis- and dissertation-level students working in the areas of resources, development, and environmental cognition, who are developing proposals or preproposal research papers. The seminar provides a forum for discussion, criticism, and practical advice.

Staff

Offered periodically

312 SEMINAR: AGRICULTURE AND DEVELOPMENT/ Seminar

A reading seminar on major interdisciplinary themes dealing with various aspects of agricultural growth and development among traditional farmers and Third World countries. Issues of study include growth vs. development, transitional farming behavior, and constraints to production.

Mr. Turner

Offered periodically

314 RESEARCH DESIGN, RESEARCH METHODS/ Seminar

Covers all the major topics in research design and methodology: e.g., problem definition, research strategies, measurement, sampling, data collection techniques and procedures. Meets first year core course requirement for geography graduate students.

Ms. Hanson

Offered every year

318 EXPLANATION IN GEOGRAPHY/ Seminar

Varying views of explanation, including positivist, realist, and conventionalist, are explored. Particular attention is given to the tensions between structural and nonstructural explanation and the integration of theory and empirical facts. Meets first year core course requirement for geography graduate students.

Staff

Offered every year

320 SEMINAR IN SYSTEMS AND SOCIAL SCIENCE/ Seminar

The structure of explanations in social science is examined as the rudiments of more elaborate systems, teleological systems, and functional systems explanations. The structure of each system explanation is critiqued. Attempts to provide such explanatory forms in geography and related disciplines are examined.

Mr. Turner

Offered every other year

330 SEMINAR IN CULTURAL ECOLOGY/ Seminar

The "ecological transition," the increasing incorporation of nature into human culture, is the point of departure for an examination of the theory, method, and policy relevance of cultural ecology. Prerequisite: Geography 177 or equivalent.

Mr. Johnson, Mr. Turner

Offered periodically

336 HOUSEHOLD ECONOMIC BEHAVIOR AND THE GEOGRAPHY OF DEVELOPMENT/**Lecture, Discussion**

Explores the nature and role of the household as a socioeconomic organization and primary decision-making unit in developing countries. Key issues relate to semisubsistence farm households, migration, urban-rural linkages, gender and

age divisions of labor, women farmers, and cash crop versus food crop. Decision-making theory and the economics of household production are studied as a basis for household-level research on resource management.

Ms. Berry

Offered periodically

340 ECOLOGY AND PREHISTORY/ Seminar

Explores various topics of cultural ecology in prehistory. Thematic content varies but can include: rise and fall of populations, origins of domestication, environment and rise of civilizations, and others.

Mr. Johnson, Mr. Turner

Offered periodically

348 RESEARCH IN HAZARD MANAGEMENT/ Seminar

Advanced research in the theory and analysis of hazard management with particular attention to decision making and political conflict.

Mr. Kasperson

Offered periodically

351 RESOURCE GEOGRAPHY: THEORY AND METHOD/ Seminar

Examination of major theories and methods of resource estimation, allocation, and management, providing coverage of the scholarly literature of the field.

Ms. Emel

Offered every other year

353 RESEARCH IN ENVIRONMENTAL MANAGEMENT/ Noncredit seminar

Monthly colloquia on topics of research interest to graduate students and faculty specializing in this field. Presentations by visiting scientists, research project members, and graduate students are included.

Staff

Offered every year

360 DEVELOPMENT THEORIES AND PHILOSOPHIES OF CHANGE/ Seminar

A graduate seminar examining development theory relating theory, issues, and practice, with an emphasis on the evaluation of ideas and the search for alternative approaches to development interventions.

Ms. Berry

Offered every other year

362 SEMINAR IN GEOMORPHOLOGY/ Seminar

Explores patterns of thought in modern geomorphology focusing particularly on fluvial and mass wasting processes acting directly on hill slopes.

Mr. Lewis

Offered periodically

365 SEMINAR IN SOCIAL AND ECONOMIC GEOGRAPHY

Theories of regional development and underdevelopment, industrial restructuring, and the role of the state are examined at an advanced level. A background in underdevelopment theory is required.

Mr. Peet

Offered every year

367 IDEAS OF CULTURE/ Seminar

The quest of cultural geography is to bring the ideas of culture embedded in the humanities and the sciences to an understanding of geography's traditional concerns—place and space, ecology and landscape. Culture is defined as the ideal (a state or habit of mind), the documentary (the body of intellectual and moral activities), and the social (a whole way of life which expresses certain meanings and values not only in art and learning, but also in institutions and social behavior) (Raymond Williams). Examines the meanings of culture in geography, the rela-

tions between culture and humanism, society and economy, and the historical and philosophical underpinnings of the concept.

Mr. Bowden

Offered periodically

368 COLLOQUIUM: THE DEVELOPMENT OF WESTERN GEOGRAPHIC THOUGHT/ Discussion

After a brief survey of Western geography from Classical times, the colloquium examines the principal paradigms, themes, and debates within the discipline in the twentieth century and the professional structure of the field as it exists in research, education, and applied contexts. Designed primarily for graduate students in geography who want a general overview of their intended profession. Meets first year core course requirement for geography graduate students.

Mr. Koelsch

Offered every year

369 ENVIRONMENT AND DEVELOPMENT/ Seminar

The complex, often counter-intuitive, linkages between nature, society, and technology have produced more failures in attaining development objectives than successes. The seminar focuses on exploring reasons and explanations for this mixed result. Case studies from a wide range of economic, social, and environmental settings are examined to isolate principles of successful development.

Mr. Johnson

Offered every other year

370 ANIMAL AGRICULTURE/ Lecture, Discussion

Animals and humans have a long history of close association. First as hunters and then as domesticators, humans have relied on animals for food, fiber, labor, and companionship. The ecology of many diseases also links people to the animals that they exploit. Today animals play an increasingly important role in efforts to increase food production and to improve diet quality in support of a growing human population. Both terrestrial and aquatic animal systems, and the theory and practice of their intensified exploitation, are examined in this seminar.

Mr. Johnson

Offered every other year

373 SEMINAR IN URBAN GEOGRAPHY/ Seminar

Through readings and discussion, this seminar focuses on major research problems in urban geography. Each student formulates a research problem and designs and executes a research project. Prerequisites: Geography 141 and 110 or equivalent.

Ms. Hanson

Offered every other year

395 ECONOMIC DEVELOPMENT AND POLICY ANALYSIS/ Seminar

Examines various approaches and strategies for economic development emphasizing their implications for institutional change and patterns of resource allocation through case studies of selected countries. The impact of various policy choices on industry, agriculture, domestic and international trade, finance, and labor use are analyzed.

Ms. Seidman

Offered periodically

Geology

PARTICIPATING FACULTY

Laurence A. Lewis, Ph.D.: geomorphology, soils

Jacque L. Emel, Ph.D.: water resources, soils

Stanley R. Herwitz, Ph.D.: geomorphology, hydrology, field methods

UNDERGRADUATE COURSES

Although no formal program in geology exists, several introductory courses are offered each year, and more advanced courses are offered periodically. Students interested in geological studies can prepare for advanced work in the discipline by taking basic courses in the physical sciences and mathematics along with some of the courses listed below. Students interested in the geological sciences should contact the Graduate School of Geography or one of the participating faculty to plan an appropriate major leading to graduate work in the area.

100 INTRODUCTION TO GEOLOGY/ **Lecture, Laboratory**

An introduction to the basic principles of physical and historical geology. Topics covered include the formation of earth and earth materials, plate tectonics, land-form evolution, glaciology, and the history of life. The processes that shape the surfaces of other planets in our solar system are also considered.

Mr. Herwitz

Offered every year

114 GEOMORPHOLOGY/ **Lecture**

The theory of plate tectonics is explored in relation to the uplift of mountains, tectonics, and volcanism. The gradual wearing down of the earth's surface by hydrological processes is emphasized in the latter part of the course. Prerequisite: Geography 022 or Geology 100 or permission of instructor.

Mr. Lewis

Offered every year

115 HYDROLOGY/ **Lecture**

Provides an overview of the hydrologic cycle and its major components including precipitation, evapotranspiration, soil moisture, surface water runoff, and groundwater flow. The course focuses upon the role of water as a unifying concept in environmental science. Prerequisite: Geography 021 or 022 preferred, but not required.

Staff

Offered every year

118 ENVIRONMENTAL GEOLOGY/ **Lecture**

Examination of the basic concepts and processes within the earth sciences relative to the evaluation of risks and decisions on future policies of land use and resource utilization. The emphasis is on aspects of the environment of particular interest to geographers, geologists, and planners. Prerequisite: Geography 022 or Geology 100 or permission of instructor.

Staff

Offered every other year

124 SOIL SCIENCE/ **Lecture, Fieldwork**

Designed for students interested in physical geography, agriculture, environmental management, and land use planning. Topics covered include soil genesis, chemistry, and physics. Specific management problems, including erosion and pollution, provide cases for understanding general principles. Fieldwork provides opportunities for students to learn basic sampling and monitoring techniques. No prerequisite although chemistry would be useful.

Ms. Emel

Offered every other year

211 GEOMORPHOLOGY OF HUMID TROPICS/ **Lecture, Discussion**

The humid tropics, home of the rainforest, dry forest, and savanna are areas of special interest due to their fragility. Deep weathering of rocks, rapid soil erosion when the forest or grasses are removed, great rivers in the tropics, and the devastating impact of human intervention are among the topics explored. Prerequisite: Geography or Geology 114 or permission of instructor.

Mr. Lewis

Offered every other year

212 QUATERNARY GEOLOGY/ Lecture

A consideration of the theories and methods used in reconstructing paleoenvironments over the last two million years. Topics covered include carbon-14 dating, stratigraphic correlation, glacial geomorphology, vertebrate paleontology, palynology, and dendrochronology. The Quaternary geology of New England will be emphasized in field trips. Prerequisite: Geology 100 or Geography 022 or permission of instructor.

Mr. Herwitz

Offered periodically

213 FIELD METHODS IN THE EARTH SCIENCES/ Seminar (Senior Project/ Seminar)

Methods of measuring and monitoring the physical environment. Students have an opportunity to conduct field research and gain experience in acquiring data in the areas of meteorology, surface and ground water hydrology, geomorphology, pedology, and forest ecology. Field and laboratory research leads to the preparation of a formal article that conforms to the specifications of a scientific journal. Prerequisite: permission of instructor.

Mr. Herwitz

Offered every year

215 FLUVIAL GEOMORPHOLOGY/ Lecture, Discussion

The focus is on the relations between hydrology and geomorphology. The basic properties of hydraulic geometry, erosion, and deposition are explored. Prerequisite: Geography or Geology 114 or permission of instructor.

Mr. Lewis, Staff

Offered every other year

271 HYDROGEOLOGY/ Lecture, Discussion

An introduction to both the geological and hydrological factors controlling the occurrence and development of groundwater and the methods and impacts of groundwater management.

Staff

Offered every year

German

See Department of Foreign Languages and Literatures

Government and International Relations

DEPARTMENT FACULTY

John C. Blydenburgh, Ph.D., *chair*: elections, polling, national politics

Kathleen Bailey, Ph.D.: Soviet Union, comparative politics

Brian J. Cook, Ph.D.: public policy, public administration, environmental politics, congressional politics

Cynthia H. Enloe, Ph.D.: women and politics, militarization, Asian and black politics

Beverly C. Grier, Ph.D.: African politics, international development

Sharon P. Krefetz, Ph.D.: urban politics, suburban politics, women and politics

Knud Rasmussen, Ph.D.: political theory, European politics, business and politics

Robert Rosh, Ph.D.: international relations, arms in the Third World

Zenovia A. Sochor, Ph.D.: Soviet Union, comparative politics, foreign policy

ADJUNCT FACULTY

Robert F. Campbell, Ph.D.
Ronald P. Formisano, Ph.D.
Roger E. Kasperson, Ph.D.
George M. Lane, M.A.
Ann T. Schulz, Ph.D.
Barbara P. Thomas, Ph.D.

EMERITUS

Morris H. Cohen, Ph.D.

UNDERGRADUATE PROGRAM

The study of politics at Clark University is the study of some of the most important questions that face mankind: When and how should force be used in relations among competing interests? What are the rights of the individual versus the rights of the state? What is a fair distribution of scarce resources? And, most important, who decides such questions and how? The department offers courses that address these questions and others in international relations, in American politics, in comparative political systems, and in public policy formation and implementation. The aim of the curriculum is to provide analytic concepts, basic information, and a theoretic basis to enable the student to develop the student's own answers to these questions.

Requirements for the Major

The major is organized in such a way as to provide a general introduction to the study of politics as well as an opportunity to explore one particular subfield in greater depth. The subfields allow concentration either on American or foreign politics. There are four subfields offered by the Government Department: American politics, comparative politics, international relations, and public policy and administration.

Government majors must take thirteen courses in all. Although the number of required courses is fixed, students have a considerable amount of leeway in choosing particular courses. Most of the courses are in the Government Department. A few are from disciplines outside of the Government Department; these are intended to complement the study of politics with other perspectives, as well as to establish the relationship between government and other essential sectors of society. The thirteen required courses are divided into two categories:

- General government requirements
- Subfield specialization requirements

General government requirements

Seven courses:

- (1) one introductory course in addition to the introduction to a selected subfield specialization,
- (2) *Issues and Perspectives*, (Economics 10)
- (3) one course in normative political theory,
- (4) one course in research methods and skills, and
- (5-6-7) three government courses from outside the subfield.

Subfield specialization requirements

Six courses:

- (8) one subfield introductory course (*Introduction to American Government*, *Introduction to International Relations*, *Introduction to Comparative Politics*, *Introduction to Public Policy and Administration*),

(9-10) two additional government courses in a chosen subfield, and (11-12-13) three courses, related to the subfield, from outside the Government Department. (A list of related courses is available from the Government and International Relations Department Office.)

In summary, a total of thirteen courses—nine in government, one in economics, and three from related disciplines—must be taken to fulfill the requirements for the government major.

The International Relations Concentration

The international relations concentration was established in 1980 in conjunction with the Department of History. Students choosing this concentration must still satisfy the general requirements for the government major including Economics 10, *Political Theory, Research Methods*, a second introductory course, and three other government courses not in the international relations subfield. The concentration itself normally includes Government 169, History 238, Economics 108, History 190, Government 249, and a seminar. The possibility also exists for specializing in either political economy or diplomacy. Students who complete the appropriate courses receive a notation on their final transcript: "Concentration in International Relations."

Honors in Government

Students with an exceptionally good academic record by the end of the junior year may apply to the Honors Program in the Government Department. Students can achieve *honors* only by successfully completing the Honors Program, which involves conducting extensive research and writing and defending a senior thesis. The Honors Program helps to expand research and writing skills through an in-depth analysis of some topic. There is a great deal of elective work involved, but at the same time there is a great intellectual and personal satisfaction in mastering one area of scholarship.

Student Handbook

The Government Department publishes a handbook, which has a more extensive description of programs, courses, and faculty, as well as other information relevant to the major or interested student. Copies are available in the Academic Center, Room 302.

PROGRAM AND GENERAL COURSES

107 RESEARCH METHODS IN POLITICS/ Lecture, Discussion

The focus of this course is the logic of the research process: from developing a research design (e.g., formulating and stating testable hypotheses, operationalizing concepts) to selecting a sample and collecting appropriate data (e.g., using the computer to generate contingency tables and calculate measures of association). The broad concepts that underlie various methods and techniques are considered, as are statistical manipulations necessary to employ them. Students use data sets surveying political attitudes and behavior in recent U.S. elections for homework assignments and computer projects.

Ms. Krefetz

Offered every year

202 APPLICATIONS OF GAME THEORY

Game theory was invented by John Von Neuman in the 1920s as a language and a logic for analyzing human conflict. It purports to be useful (and your professor believes it is) to systematically identify the best strategies for resolving many types of conflicts. Emphasis in this course is on understanding and applying the

language and the logic. But a substantial amount of the course deals with applications and illustrations, for example to international relations, nuclear confrontation, political campaigning, and a host of other real-life situations. Emphasis is on "two-person" models with a selective review of "n-person" models. Students learn how to use bargaining, threats, commitments, mediators, ignorance, and power in resolving conflicts.

Mr. Bydenburgh

Offered every other year

205 ROOTS OF POLITICAL THOUGHT/ Lecture, Discussion

A study of the development of Western political thought from the Socratic philosophies to Hobbes. Trend-setting philosophers and ideas transcending their time in importance are given special attention. The evolution of political thought is discussed in the context of influential social, political, and economic forces.

Mr. Rasmussen

Offered every year

206 RECENT POLITICAL THEORY/ Lecture, Discussion

A study of modern political theory as developed in the context of the social, political, and economic forces that have shaped Western thought since the French Revolution. Socialism, democracy, and conservatism are discussed in both an evolutionary and contemporary setting.

Mr. Rasmussen

Offered every year

299 SENIOR THESIS IN GOVERNMENT AND INTERNATIONAL RELATIONS

Offered for variable credit.

Staff

299.1 DIRECTED READINGS

Offered for variable credit.

Staff

299.5 SPECIAL PROJECTS

Offered for variable credit.

Staff

299.9 INTERNSHIP

Offered for variable credit.

Staff

INTERNATIONAL RELATIONS COURSES

(Also, see separate catalogue section on International Relations.)

169 INTRODUCTION TO INTERNATIONAL RELATIONS/ Lecture, Discussion

Designed to equip the student with the analytic and conceptual tools to make sense out of the many complexities of international politics. The first part of the course is organized around the concepts of nation-state, sovereignty, power, perception, system, intervention, verbal strategy, and reciprocity. Next, it explores the nuclear relationship between the Soviet Union and the United States in some detail. The final section of the course takes up topics related to North-South relations, the gap between rich and poor nations, and different development strategies. Particular attention is paid to global corporations, global debt, the International Monetary Fund, and the changing international division of labor.

Mr. Rosh

Offered every year

179 COMPARATIVE FOREIGN POLICY

Explores the factors that influence the formulation and execution of foreign policy. Attention is accorded to the international setting of foreign policy making as well as to the domestic sources of foreign policy behavior. Comparisons and contrasts are drawn among several countries in order to gain insight into the range of foreign policy options, constraints, and strategies. Particular attention is given to European and Soviet foreign policy.

Ms. Sochor

Offered every other year

210 INTERNATIONAL ORGANIZATIONS IN WORLD POLITICS/

Lecture, Discussion

Thirty years ago international organizations such as the United Nations expressed the hopes of human society for a more peaceful world order. These utopian hopes were soon disappointed and interest in such organizations waned. More recently the perception of interpenetration of national economies; the recognition that energy, environmental, and disarmament issues among others are global problems; and the development of a Third World alliance have regenerated interest in international organizations. This course surveys functionalism, neo-functionalism, and supranationalism as explanations of the emergence of such organizations. It also examines selected international organizations such as the OAS, the EEC, OPEC, and the World Bank. Extensive attention is paid to the United Nations system in all its complexity. Government 169 is recommended.

Mr. Rosh

Offered periodically

211 MODEL UNITED NATIONS/ Lecture, Discussion

The core component of this course is participation in the Harvard National United Nations Conference and National Model U.N. Conferences. The members of the class represent Clark University at the conferences by acting as delegates from nation-states. Issues ranging from disarmament to human rights to current political crises are researched. Students prepare resolutions and speeches and learn the rules of procedure operative at the United Nations. Oral reports and a written paper also are required. Open to all qualified students, though class size is limited and permission of the instructor is required. Government 210 or relevant experience strongly recommended.

Mr. Rosh

Offered every year

245 U.S. FOREIGN POLICY - MIDDLE EAST

This course provides an overview of U.S. foreign policy and diplomacy towards Israel and the Arab countries since World War II. The first sessions review the factors that affect the formation and implementation of U.S. foreign policy in the Middle East, while the remaining sessions deal with the events of the last forty years in this general region and in several specific countries.

Mr. Lane

Offered periodically

249 INTERNATIONAL POLITICAL ECONOMY/ Lecture, Discussion

Organized around the debate among world systems theory, Marxist theories of imperialism, and liberal developmentalism about the structure of the global economy. The evolution of the global economy from 1450 to the present is analyzed. Themes such as hegemonic cycles, underdevelopment, and imperial dominance organize the historical section of the course. Finally, contemporary issues such as the changing international division of labor, the political economy of global debt, and the politics of primary commodity trade receive attention.

Mr. Rosh

Offered every other year

280 SOVIET FOREIGN POLICY/ Lecture, Discussion

Provides an overview of Soviet foreign policy, identifies underlying trends and motivating forces, and examines areas of particular concern for the Soviet leadership. Some of the questions posed in the class include the following: Is Soviet foreign policy somehow unique because of its revolutionary origins and its Marxist ideology? How do economic factors influence foreign policy? Why has there been a large Soviet military build-up? Does *detente* have a future?

Ms. Sochor

Offered every other year

283 THE SUPERPOWERS AND THE THIRD WORLD/ Seminar

The purpose is two-fold: (a) to consider the goals and policies of the Superpowers toward the Third World, and (b) to examine specific case-studies where these goals and policies were carried out, amended, or challenged. Some of the underlying questions posed in this course include: What are Superpowers' expectations of, and sources of influence on, the Third World? To what degree are North-South issues affected by East-West considerations? How are local problems exacerbated by Superpower intervention? What are the long-range prospects for the international system as a whole?

Ms. Sochor

Offered every other year

289 SEMINAR IN ADVANCED TOPICS IN INTERNATIONAL RELATIONS

The substantive content of this course varies with the interests of the instructor. Possible topics include issues in international development, multinational corporations, the new international economic order, or issues in U.S. foreign policy. Designed principally for advanced students concentrating in international relations. Other students may be admitted by permission of the instructor.

Staff

Offered every other year

AMERICAN POLITICS COURSES

150 INTRODUCTION TO AMERICAN GOVERNMENT/ Lecture, Discussion

Introductory study of the processes and efficacy of the American governmental system. Primarily devoted to an overview of contemporary aspects of the national government, the course includes problems of federalism; salient civil liberties issues; and the roles of Congress, the president, the Supreme Court, and political parties in the decision-making process.

Staff

Offered every year

170 AMERICAN POLITICAL THOUGHT AND BEHAVIOR/ Lecture, Discussion

There are three major foci for this course: (1) some of the most important ideas that have formed a distinctive American political culture: our shared values, beliefs, attitudes, and expectations from government; (2) how this culture is transmitted by society, i.e., the process of political socialization, through which our political orientations and behavioral predispositions are shaped; and (3) contemporary political attitudes and behavior in the U.S., especially voting in recent presidential elections.

Ms. Krefetz

Offered periodically

172 SUBURBIA: PEOPLE AND POLITICS/ Lecture, Discussion

The growth of suburbs in the United States since the end of World War II has had considerable impact upon the nature of our metropolitan areas. This course focuses on the following questions: Why has this growth occurred? What are the characteristics of the people who live in suburbs? Is suburban homogeneity a

myth or reality? How are suburbs governed? What is political participation like? What are the patterns of policy-making in issues such as education, zoning, and property taxes?

Ms. Krefetz

Offered every other year

175 WOMEN AND POLITICS/ Lecture, Discussion

An exploration of the political behavior of American women and of the factors that condition their behavior, including socialization and learning of sex roles, social background and life situation variables, and historical arrangements of political institutions. Among the questions to be considered are: Why are women generally less interested, less active, and less efficacious politically than men are? What are the characteristics of those women who do engage in political activity? What is the likely impact of the women's movement and women's issues on the future behavior of women in politics?

Ms. Krefetz

Offered every year

204 THE AMERICAN PRESIDENCY/ Lecture, Discussion

A study of the constitutional and other powers and functions of the president and the presidency via selected readings and individual research.

Staff

Offered every year

209 THE U.S. SINCE 1945

Refer to course description under History 209.

Mr. Formisano

Offered every year

214 SEMINAR IN BUSINESS AND POLITICS

Examines the social role of business from a theoretical and a practical point of view. The theoretical aspects are explored through a series of readings of major writers in this area. The practical aspects are dealt with through the use of community resources. This course permits individualized reports in specific areas of interest. Enrollment is limited to twenty students.

Mr. Rasmussen

Offered every other year

215 STATE GOVERNMENT AND POLITICS

This is an overview of the operation of state governments, explaining the distinctive features of states in terms of their individual political, economic, historical, legal, and demographic characteristics. The focus is on how these features explain state political systems in the present and how they are likely to shape the states of the future. Special attention is given to Massachusetts and other northeastern states. Government 150 is recommended but not required.

Mr. Blydenburgh

Offered every other year

220 URBAN GOVERNMENT AND POLITICS/ Lecture, Discussion

The primary focus is on the various socioeconomic and political forces that affect American urban politics and policy-making. Topics discussed include: the social, economic, and political nature of the city; the fiscal crisis; federal and state urban policies; relations between city and suburb; political machines and reformers; the community power debate; mayoral power and styles; city employees; and policy output.

Ms. Krefetz

Offered every year

221 SEMINAR IN PUBLIC POLICIES AND AMERICAN CITIES

What difference does it make "who governs?" What sorts of variations are there among cities in their policy outputs in such areas as welfare, housing, urban redevelopment, poverty, the police, and the criminal courts; and what accounts

for the differences? Special attention is given to the political aspects of the implementation process and to issues concerning the equity of services delivered. After a critical review of the existing literature, research will be conducted on a policy area of the student's choosing in Worcester and/or other cities. Prerequisite: Government 220 or permission of instructor.

Ms. Krefetz

Offered every other year

223 SUBURBAN POLICY ISSUES/ Seminar

Picks up where the introductory suburban politics course leaves off and explores politics and policy making on several major issues in suburban communities, especially zoning and land use, education, and property taxes. Students conduct original research on these issues in Worcester and Boston suburbs. Prerequisite: Government 221 or permission of instructor.

Ms. Krefetz

Offered periodically

224 BLACK POLITICS IN THE UNITED STATES/ Lecture, Discussion

Analyzes the black political experience today and in the past. Among topics to be explored are: black theory and debate, black politics in cities and labor unions, blacks in the bureaucracy, and a comparison of Northern and Southern black politics.

Ms. Enloe, Ms. Grier

Offered every third year

231 SEMINAR IN POLITICS AND ENVIRONMENT

Refer to course description under Geography 231.

Mr. Kasperson

251 AMERICAN POLITICAL PARTIES AND PRESSURE GROUPS/ Lecture, Discussion

A study of the structure and functioning of the American party system and the role of selected interest groups in American politics, including some ethnic and economic influences. Special emphasis is placed on the processes and problems involved in the nomination and election of the president. American government course desirable, but not required.

Staff

Offered every year

254 AMERICAN CONSTITUTIONAL LAW

This course focuses on the historic and contemporary role of the Supreme Court in interpreting the Constitution. Topics will include the nature of Federalism, regulation of business, freedom of speech and religion, equal rights, rights of the accused, and the issues of prayer and abortion.

Mr. Campbell

Offered every year

255 THE LEGISLATIVE PROCESS/ Lecture, Discussion

An in-depth examination of the contemporary politics of the U.S. Congress from both an individual and institutional perspective. Major topics include congressional elections, differing views of representation, House-Senate differences, congressional policy making, relationships between Congress and the presidency, the bureaucracy and interest groups, and the future of the institution. Prerequisite: Government 150. Limited to juniors and seniors.

Mr. Cook

Offered every year

275 CITIZEN PARTICIPATION IN PLANNING

Refer to course description under Geography 275.

Mr. Kasperson

Offered every other year

282 SEMINAR ON HOUSING POLICIES

A critical examination of federal housing policies and state and local zoning and land use regulations. The major political, economic, and cultural factors that shape the supply, quality, and location of housing in metropolitan areas are explored. The politics of urban redevelopment, public housing, and exclusionary zoning are the main foci.

Ms. Krefetz

Offered every other year

COMPARATIVE POLITICS COURSES

106 INTRODUCTION TO COMPARATIVE POLITICS/ Lecture, Discussion

Approaches the pitfalls and rewards of comparative analysis from three directions. First, the course concentrates on two countries' politics each term: Britain and Mexico, and France and Canada in alternate years. It looks also at specific political issues such as housing, racism, and police control. Open to majors and nonmajors.

Ms. Enloe, Ms. Grier

Offered every year

112 COMPARATIVE AUTHORITARIAN SYSTEMS/ Lecture, Discussion

Focuses on the most conspicuous political fact of modern times—authoritarianism. Through a comparative study of several authoritarian regimes, the course seeks to understand the dynamics of modern authoritarianism: its inception and structure, its transitional or permanent nature, and its distinct variations. The course first examines prevalent historical examples (e.g., Hitler's Germany or Franco's Spain) and then selects contemporary case studies from Europe, Latin America, and the Middle East.

Ms. Sochor

Offered every other year

117 REVOLUTION AND POLITICAL VIOLENCE/ Lecture, Discussion

Analyzes the concept, the causes, and the process of revolution. Distinctions are made between revolution and other forms of political violence such as terrorism, rebellion, and *coups*. The course examines theories of revolution as well as specific case studies. The Russian and Chinese revolutions are studied as twentieth-century prototypes; comparisons are then drawn to recent revolutions in the Middle East and Latin America.

Ms. Sochor

Offered every other year

125 DEVELOPMENT PROBLEMS/ Lecture, Discussion

Refer to course description under International Development 125.

Ms. Thomas

Offered every year

136 SUB-SAHARAN AFRICA: ISSUES AND PROBLEMS/ Lecture, Discussion

Explores issues and problems confronting sub-Saharan Africa, including the legacy of colonialism, establishment of nation-states, changing production systems, the roles of women in existing economic structures, conflict in the Horn of Africa, relations with South Africa, the emergence of class, and strategies for socioeconomic change. Readings include contemporary literature, public documents, journals, and newspapers, and secondary sources. Illustrative material is drawn selectively from East, West, and Southern Africa.

Ms. Thomas, Ms. Grier

Offered every other year

178 POLITICS AND HISTORY OF SOUTH AFRICA/ Lecture, Discussion

The aim of the course is to acquaint students with the forces that have shaped the political system in South Africa today. The structure of the economy (mining,

agriculture, and industry) is examined with particular attention being paid to the role of black labor. The rise and consolidation of Afrikaner nationalism, the introduction and implementation of apartheid, the response of blacks to apartheid and to growing rural and urban poverty, and South Africa's foreign policy toward neighboring African countries are among the topics discussed. The economic and political role played by American investment in South Africa is explored, as is official U.S. policy toward the country.

Ms. Grier

182 COMPARATIVE EUROPEAN POLITICAL SYSTEMS/ Lecture, Discussion

A comparative study of the major west European political systems. Study of the political historic development will lay the basis for comparison of modern functions of government. Emphasis is placed on systemic analysis and its importance for comparative politics.

Mr. Rasmussen

Offered every year

207 POLITICS AND DEVELOPMENT: KENYA AND EL SALVADOR/ Lecture, Discussion

The course examines the theoretical debates surrounding concepts such as development, modernization, underdevelopment and dependency and looks in some detail at the politics of development in two countries: one in Central America and one in Africa. The role of political parties, the bureaucracy, the military, the extremes of wealth and poverty, and the impact of global economic and political forces on these countries are examined.

Ms. Grier

208 COMPARATIVE POLITICS OF WOMEN/ Lecture, Discussion

Examines the roles, priorities, strategies, and theories of women in Britain, the Soviet Union, and one Third World country. Causes for changes—and lack of genuine changes—in women's political status are investigated to shed new light on those countries' political systems (politics of development, revolution, sexuality, labor, and the family are discussed). One or more previous courses in government or women's studies is strongly advised.

Ms. Enloe, Ms. Grier

Offered every year

222 STRATEGIES OF DEVELOPMENT AND CHANGE IN COMMUNIST POLITICAL SYSTEMS/ Lecture, Discussion

Examines the relationship between ideology, political power, and levels of economic development in the formulation of communist political systems. The course poses the central question: How do communist political leaders attempt to achieve the dual goals of development and socialist transformation? Begins with a brief examination of the Soviet Union as a prototype of a communist political system. How successfully did the Soviet Union promote the transition to socialism? For answers, this course looks at subsequent revolutions in Eastern Europe, China, and Cuba to determine their adherence to, or rejection of, the Soviet model. What alternative strategies of development have evolved? Also examines the sources of change and limits to change in communist political systems.

Ms. Sochor

Offered every other year

228 COMPARATIVE POLITICS OF RACE AND ETHNICITY/ Lecture, Discussion

Explores the politics of "ethnicity" and "race" for groups as different as American Blacks, South African Afrikaners, Soviet Muslims, and French Canadians in the

politics of industrialized and Third World political systems. The political interactions of sex, race, class, and state power are analyzed. Some previous study of international development, comparative politics, history, or sociology would be very useful.

Ms. Enloe

Offered every other year

235 COMPARATIVE BUREAUCRATIC POLITICS/ Lecture, Discussion

In both industrialized and developing nations, bureaucrats and their agencies have been of critical importance to policy making and implementation. This course uses cases from Europe, Africa, and Asia to explore when bureaucrats are strong and when they are weak, and why it matters to ordinary citizens and elites.

Ms. Enloe

Offered every other year

236 POLITICS OF SOUTHEAST ASIA/ Lecture, Discussion

Analyzes the changes, or blockage of changes, that have occurred in the area since 1945. Peasant politics, nationalism, foreign investment, the military, and ethnic politics are discussed. All countries are discussed, but special focus is on the Philippines and Vietnam.

Ms. Enloe

Offered every other year

237 POLITICS OF SCANDINAVIA/ Lecture, Discussion

Analyzes twentieth-century political thinking with specific reference to Scandinavian thought and political systems. The examination is of major trends as they constitute unique Scandinavian developments or reflect a broader European pattern of thinking.

Mr. Rasmussen

Offered every other year

256 GOVERNMENT AND POLITICS OF THE SOVIET UNION/ Lecture, Discussion

Examines key factors in the formation and evolution of the Soviet political system. The first part of the course reviews critical junctures in Soviet political history; the second part focuses on the operation of the contemporary Soviet system. Particular attention is paid to the domestic and international challenges facing Soviet political leaders, the resources at hand, and the institutional framework for arriving at political solutions.

Ms. Sochor

Offered every year

261 WOMEN AND MILITARIZATION IN A COMPARATIVE POLITICS PERSPECTIVE/ Lecture, Discussion

Examines the analytical proposition that the process by which any country's military grows in influence is shaped by its ideas about "masculinity" and "femininity." We explore questions such as: What do women's own experiences in wartime and peacetime reveal about military politics? What do we newly reveal about militaries when we analyze governments' policies to use women as mothers, wives, workers, prostitutes? Do cultural and economic differences shape the military sexual division of labor? Countries such as Britain, Thailand, Philippines, and the U.S. are discussed. Previous government or women's studies courses are desirable. Limited to juniors and seniors.

Ms. Enloe

Offered every other year

262 COMPARATIVE POLITICS OF WOMEN AND LABOR/ Seminar

Women's studies have made the very meaning of "labor" more complex. This course explores the relationship between paid and unpaid labor, political alliance, and ideologies. The experiences of white women and women of color in the U.S., Canada, Europe, Africa, and Latin America are explored. Previous courses in

women's studies or comparative politics would be useful. Limited to juniors, seniors, and graduate students.

Ms. Enloe

Offered every other year

265 POLITICS OF JAPAN/ Lecture, Discussion

Japan is considered one of the world's four great powers. Yet its domestic political dynamics are not widely understood by Americans. This course explores the major factors that have shaped Japanese politics and government policies since 1945. Among the topics to be analyzed are: the group loyalties of Japanese, the factional rivalries within major parties, the influence of bureaucrats, and the role of women and business in politics. The course is open to majors and nonmajors.

Ms. Enloe

Offered every other year

PUBLIC POLICY AND ADMINISTRATION

109 INTRODUCTION TO PUBLIC POLICY AND ADMINISTRATION/ Lecture, Discussion

The course provides an introduction to the policy-making process at the national level. Focuses on the critical stages of policy making, including agenda setting, policy formulation, and implementation. The emphasis is on the interactions among the principal policy-making institutions, especially Congress and the federal bureaucracy, and how these interactions shape public policy. The material emphasizes conceptual understanding and application to policy issues. Besides lectures and discussions, class meetings include simulations and student presentations. Government 150 is strongly recommended.

Mr. Cook

Offered every year

157 THE POLITICS OF ENVIRONMENTAL ISSUES/ Lecture, Discussion

Intended to provide the student with a basic understanding of environmental issues. The course considers the sources of environmental problems, how issues arise, how policies have been formulated, and what effects the policies have had. The general topics covered include the physical nature of pollution problems, the social and political dynamics of pollution problems, environmental politics in Congress, and environmental regulation and its reform.

Mr. Cook

Offered every other year

213 POLICY ANALYSIS METHODS/ Lecture, Discussion

Policy analysis is broadly understood as the application of social science to public problems. The roots of policy analysis are multidisciplinary, with major methodological contributions made by economics, political science, and social psychology. This course examines the epistemological underpinnings and general techniques employed in analysis. The objective is to provide students with the ability to understand critical public problems in multidimensional ways and to recognize under what circumstances particular techniques are appropriate. The major assignment is participation in a class project analyzing a current policy problem. Prerequisite: Government 107 or Economics 160 or permission of instructor. Limited to juniors and seniors.

Mr. Cook

Offered every year

221 SEMINAR IN PUBLIC POLICIES AND AMERICAN CITIES

Refer to course description under American Politics courses.

Staff

Offered every other year

247 SELECTED PROBLEMS IN PUBLIC POLICY/ Seminar

The substantive content of the course varies with the interests of the instructor.

The course is intended as a workshop in policy analysis, emphasizing in-depth study of a current public policy controversy using various tools of policy analysis. Possible topics for analysis include environmental policy and pollution control, urban policy and metropolitan development, economic policy and control of the economy, and regulation. Prerequisite: Government 213 or permission of instructor.

Mr. Cook

Offered every other year

269 PUBLIC POLICY AND MACHIAVELLI REVISITED/ Lecture, Discussion

An in-depth analysis of Machiavelli's political theory and approach to policy making. The course differentiates between normative theory and objective analysis. In the process, themes developed by Machiavelli are applied to current policy formation and models for public policy analysis.

Mr. Rasmussen

Offered every other year

282 SEMINAR ON HOUSING POLICIES

Refer to course description under American Politics courses.

Ms. Krefetz

Offered every other year

292 ORGANIZATIONAL BEHAVIOR/ Seminar

The core argument on which this course is based is that organizations, especially bureaucratic ones, are best understood as political entities. The principal issues concern how executives and managers design the control systems of bureaucracies to manipulate the behavior of subordinates, and how subordinates are able to resist such attempts at control. The principal school of thought on organizational behavior, including human relations, Weberian and neo-Weberian schools are considered for their contributions to political interpretation of organizational behavior. Scholarly case studies and student research provide the material for class discussions.

Mr. Cook

Offered every year

298 PUBLIC CHOICE THEORY/ Lecture, Discussion

Reviews some important recent political theories that make use of economic concepts in attempting to explain political phenomena. Emphasis is on evaluating the theory in terms of its success in accounting for established empirical propositions as well as its prescriptive uses and normative implications. Some of the subjects covered are theories of representative government, a theory of the organization and formation of groups, theories of voting systems, and a theory of bureaucratic behavior.

Mr. Blydenburgh

Offered every other year

FIVE-YEAR M.P.A. PROGRAM

Clark offers a five-year undergraduate/graduate Master of Public Administration Program which allows undergraduates to begin study toward careers in public administration. Students earn a B.A. in their major as well as the M.P.A., by beginning graduate level courses in public administration during their junior and senior year and completing the M.P.A. degree during a fifth year of full-time study. For information about the five-year program or additional course offerings in public administration, see the director of the M.P.A. Program.

Hebrew

See Department of Foreign Languages and Literatures.

History

DEPARTMENT FACULTY

Paul S. Ropp, Ph.D., *chair*: Asian history, comparative history

George A. Billias, Ph.D.: colonial American history, comparative history, military history

Daniel R. Borg, Ph.D.: modern German history, modern European history, political history

Richard B. Ford, Ph.D.: African history, resource management, international development

Ronald P. Formisano, Ph.D.: U.S. political and social history, nineteenth century and since 1945; social movements; community power; historical method

Tamara K. Hareven, Ph.D.: social history, urban history, history of the family, history of the life course and aging, nineteenth- and twentieth-century U.S. history

Douglas J. Little, Ph.D.: U.S. diplomatic history, America since 1900, modern Latin America

Paul Lucas, Ph.D.: Western civilization; Europe, especially England and France, 1500-1800; European intellectual history, 1650-1945

AFFILIATE AND ADJUNCT FACULTY

Douglas M. Astolfi, Ph.D.

Thomas C. Barrow, Ph.D.

Paul F. Burke Jr., Ph.D.

Stuart W. Campbell, Ph.D.

William A. Koelsch, Ph.D.

Marcus A. McCorison, M.S.

Richard P. Traina, Ph.D.

Richard P. Tucker, Ph.D.

EMERITI

Robert F. Campbell, Ph.D.

Dwight E. Lee, Ph.D.

Theodore H. Von Laue, Ph.D.

UNDERGRADUATE PROGRAM

Despite Henry Ford's famous dictum that "history is more or less bunk," the study of the past provides fresh insights into the present and can even suggest the emerging contours of the future. Clark's History Department seeks to do both by bringing the past alive through nontraditional and interdisciplinary courses that emphasize trends and ideas rather than names and dates. Whether you are interested in colonial America or modern Africa, in family history or international relations, a careful look at yesterday may indicate what tomorrow holds in store.

Students choose a history major for different reasons. Those preparing for careers in government, law, and sometimes business choose the major for the opportunity to gain insight into the diversity of human affairs. They desire a humanistic study geared toward a practical end. Others view the history major as the broadest and most flexible one in which to study their particular interests from a number of perspectives. Some are committed historians before they arrive at Clark. Their counterparts are those who become history majors by a process of elimination. For history majors and nonmajors alike, history provides an

insight into their own individual and collective pasts and, therefore, into their own identities. History courses also introduce students to the global dimensions of world civilization by providing an understanding of the historical evolution of other peoples and cultures.

UNDERGRADUATE MAJOR

The Major Requirements

(Note on course numbers: Two-digit courses are broad surveys especially designed for freshmen. The 100-level courses also serve as introductory surveys, but they treat a narrower range of topics in greater depth. The 200-level courses, intended for juniors and seniors, normally have heavier reading and writing requirements than lower level courses.)

A. Students take *nine* history courses and any *four* nonhistory but related courses.

B. Of the nine history courses,

1) *One* must be a two-digit or 100-level course in one of the following four concentrations that you choose as the base for your major:

a) In American history,

History 10, *Introduction to History and American Studies*

History 11, *Survey of U.S. History to 1877*

History 12, *Survey of U.S. History Since 1877*

History 16, *Race and Ethnicity in American History*

History 20, *America and the World*

History 130, *Freshman Colloquium in American History*

History 135, *U.S. Social History: 1850 to Present*

b) In European history,

History 30, *Freshman Colloquium in European History* (if designated in introductory course for the major)

History 70, *Our European Roots*

History 71, *Our European Roots*

c) In global history (non-U.S. and non-European)

History 80, *Introduction to Modern Asia*

History 90, *Survey of Twentieth-century Global History*

History 177, *Latin America Since 1825*

History 179, *Traditional Africa*

History 180, *Modern Africa* History 181, *Traditional China*

History 182, *Modern China*

History 185, *Modern Japan*

d) In other concentrations, such as

1) Jewish studies

History 174, *The Jewish Experience*

2) International Development

History 125, *Development Problems*

3) Women's studies, black studies, other thematic studies of various types or self-designed concentrations. See the department chair.

4) Predesigned structured concentrations (American studies and international relations). See relevant sections in this catalog.

2) *one* must be a two-digit or 100-level course outside of your chosen concentration,

3) *two* must be 200-level courses within your chosen concentration,

4) *two* must be 200-level courses outside of your chosen concentration,

5) *two* may be any history courses that you wish to take on any level,

6) *one* must be a capstone course, usually taken in the senior year. Your capstone course should be either the departmental capstone seminar

(History 295) or a course selected from one of the following: History 204, 293, 296, 297, or 298. In addition, proseminars in your area of concentration may be substituted as a capstone, with permission from the department chair. For honors majors, thesis research is considered to be the equivalent of a capstone course.

THE HONORS PROGRAM

The honors program in history is designed to provide a challenging set of advanced courses for outstanding history majors. The program is valuable not only for would-be professional historians, but also for anyone who intends to pursue a career that requires resourcefulness and excellent analytical and writing skills.

To complete the honors program successfully, you must meet the general requirements for the major, choose a field of concentration, and earn four honors credits as part of, or in some cases in addition to, the nine required history courses. More specifically, you will enter the program by taking a pre-honors seminar or proseminar (see below). Formal admission into the honors program is contingent upon the successful completion of your pre-honors seminar and upon evidence of outstanding work in your other history courses. Then, building on your work in the pre-honors course, you will write an extensive research thesis (two course credits) under the supervision of your adviser. Finally, in the spring semester of your senior year, you will undertake a directed readings course (one course credit) in the general field of your thesis topic. The program will culminate with a written examination in your field of concentration and an oral defense of your thesis. The written examination and the oral defense will be conducted by your honors committee, which will include your thesis adviser and two other members of the department. If the committee judges your work to merit the distinction of honors, your transcript will read that you majored in history with honors, with high honors, or with highest honors. If the committee finds the thesis or examination unsatisfactory for honors credit, you will receive ordinary history credit for the thesis and directed readings course; your transcript will state simply that you majored in history.

THE PRE-HONORS SEMINAR OR PROSEMINAR

To enroll initially in the honors program, you will take one of the history seminars or proseminars designated as available for honors credit. These are courses designed to develop research, analytical, and writing skills. The major part of these courses will be devoted to the writing and revising of research papers. It is expected that each full-time history faculty member will regularly offer at least one pre-honors seminar or proseminar. Typically these would include courses such as History 217, *American Family in Historical Perspective*; History 242, *Power in American Communities*; History 291, *Advanced Topics in International Relations*; and History 292, *Proseminar in the Writing of History*. For a more complete listing of pre-honors seminars and proseminars, consult Professor Ropp, the department chair, or Professor Formisano, the director of the honors program.

GRADUATE PROGRAM

The areas of graduate study at Clark are American history and modern European history, with select Third World historical themes as supporting fields. Emphasis is placed on American history because of the department's affiliation with the American Antiquarian Society. The Antiquarian Society provides graduate students with the facilities of one of the country's finest research libraries, with over 750,000 volumes and many valuable manuscripts relating to early American history prior to 1876. A dozen smaller libraries in Worcester, with combined holdings of more than one million volumes, further extend the resources of the Clark library, as does easy access to Boston, Providence, and New Haven area research facilities.

The department offers graduate work in the form of reading seminars (colloquia), research seminars, and individual tutorials for both reading and research purposes. First- and second-year students take three courses each semester; one of these courses must be expressly devoted to research for the purpose of producing a substantial research paper. Beyond their research seminar, students fill out their program by taking colloquia, additional research seminars, and upper-division undergraduate courses. The department chair assigns incoming graduate students to faculty advisers, who help design student programs. With the permission of the adviser, a student is encouraged to take suitable courses in other departments or colleges in the Worcester Consortium.

MASTER OF ARTS

The department enrolls master's candidates and awards the degree to students who have: completed eight courses and a one-year residence requirement; either submitted two substantial research papers prepared in two seminars, which are jointly equivalent of the master's thesis, or submitted a master's thesis; and passed the required oral examination. (The department now admits part-time M.A. students, whose residency requirement is defined in terms of courses taken.)

Ph.D. candidates who have passed their preliminary examination (whether or not they will continue with a dissertation) may also receive the degree of Master of Arts.

CERTIFICATE OF ADVANCED GRADUATE STUDY (C.A.G.S.) IN INTERDISCIPLINARY STUDIES

An interdisciplinary Certificate of Advanced Graduate Study is cosponsored by the departments of History, English, and Foreign Languages and Literatures and is administered by Clark's College of Professional and Continuing Education (COPACE).

DOCTOR OF PHILOSOPHY

The traditional doctoral program is designed to enable students to master the discipline of history through research, reading, and teaching. In addition to meeting the seminar and course requirements outlined above, a student who enters without an M.A. degree must ordinarily spend at least three years in full-time residence at Clark, satisfy the language requirement, gain some experience in college teaching, pass the preliminary examination, and write a doctoral dissertation within seven years of matriculation. (In recent years the department has also admitted part-time Ph.D. students; their residency is defined in terms of courses taken.)

Language Requirement: Students concentrating in American and British history must pass an examination in one foreign language: French, German, Spanish, or Russian. Students concentrating in American history may substitute a program in quantitative techniques or computer science for a foreign language. Those specializing in European history must pass examinations in two foreign languages, normally French and German. The department chair designates an examiner in each language, who determines if the student is proficient enough to use the language as a research tool. An entering student must take a language examination as soon as it is offered in the first semester of residence and must have passed this examination by the end of the first calendar year of residence in order to register for the second year. If required, the second language examination should be attempted early in the second year and must be completed before the student registers for the third year. All language requirements must be satisfied before the preliminary oral examination can be scheduled.

Teaching Experience: Some teaching experience at the college level is a prerequisite for the Ph.D. degree. Students normally meet this requirement in their

second or third years as teaching assistants.

Fields: Soon after arriving at Clark, each student, in cooperation with his/her adviser, defines four fields and prepares for them in whatever ways seem appropriate in view of her/his background and interests. Students specializing in American history normally offer the full scope of American history as two fields. Those concentrating in non-American history normally offer one American field. (The dividing line between the two American fields generally falls at 1815.) Any student may offer a nonhistorical subject as a field, usually within the social sciences, or prepare an interdisciplinary field.

Preliminary Examination: One of the four fields must be offered for oral examination at the end of the student's first year. Prior to taking the oral, the student must submit two research papers completed in the first year. The remaining three fields will be examined, again orally, at the beginning of the student's third year. The combined oral examinations constitute the "preliminary examination" required by the Graduate Board. Students who have passed their preliminary examinations may, upon request, receive the master of arts.

Dissertation: Students are advised to consider and explore dissertation topics during their years of residence and to choose a possible dissertation adviser as soon as possible. The process of writing a dissertation is outlined in a brochure, *Dissertation S.O.P.*, which may be obtained from the department secretary.

Deadline for Completion: All work required for the doctor's degree must be completed within a seven-year period after matriculation. In unusual circumstances only, such as part-time study or extended illness, the department may grant a specified extension of time.

COURSES

NOTE: Undergraduate courses are of two types: (1) survey courses designed for freshmen and sophomores, numbered with two digits or 100-199, and (2) advanced courses numbered 200-299. The latter carry no prerequisite (unless specifically noted) and are open to freshmen and sophomores as well as upper-class students without permission of the instructor. In case of doubt, students should consult their instructors. The term *proseminar* indicates courses of limited enrollment that combine reading, discussion, and written reports. The term *seminar* indicates a research course.

U.S. HISTORY

10 INTRODUCTION TO HISTORY AND AMERICAN STUDIES/ **Lecture, Discussion**

Introduces basic problems of historical method and interdisciplinary study as revealed in American history. The nature of history, and the individual student's connection with American social history, are examined through autobiography, family history, historical fiction, and traditional historical texts. Emphasis is placed on reading, discussion, and writing one's own family history.

Mr. Formisano, Mr. Ford

Offered periodically

11 SURVEY OF U.S. HISTORY TO 1877/ **Lecture, Discussion**

A general survey of American life from precolonial times to 1877. Special attention is given to general political trends, social, economic and intellectual developments.

Staff

Offered every year

12 SURVEY OF U.S. HISTORY SINCE 1877/ **Lecture, Discussion**

A general survey of American life from 1877 to the present. Special attention is

given to general political trends, social, economic and intellectual developments.
Staff Offered every year

16 RACE AND ETHNICITY IN AMERICAN HISTORY/ Lecture, Discussion

Explores the influence that racial and ethnic patterns have had upon the whole course of American history. In terms of race, it analyzes the impact that red, white, and black peoples have had upon American history from colonial times to the 1980s. From an ethnic perspective, the course deals with the beliefs and ideas of different immigrant groups. It seeks to show how different immigrant groups affected the changing American environment over time, and conversely how the immigrants themselves were influenced by that dynamic American environment. A midterm, a final, and assigned term papers.

Mr. Billias

Offered every year

20 AMERICA AND THE WORLD/ Lecture, Discussion

This course assumes: 1) that the United States will be a world power in the year 2000 and 2) that we should, therefore, understand America's development within the context of world history. Hence, in chronological terms, the course stresses the period since the turn of the twentieth century, when America first emerged as a world power. Among the course's themes: the expansion of Europe into an Atlantic civilization, the Atlantic revolution, America's industrial development and the rise of an American continental empire, America and the two world wars, America and the rise of the Third World, the rise of multinational corporations, the Cold War, and imperial America as a global power in the 1960s and 1970s.

Mr. Billias, Mr. Little

Offered every year

135 U.S. SOCIAL HISTORY - 1850 TO PRESENT/ Lecture, Discussion

Explores the transformation of American society following industrialization and urbanization from the middle of the nineteenth century to the present. It examines the social structure, migration and immigration, the adaptation of various groups to a complex urban-industrial society. It pays special attention to the experience of different ethnic and racial groups and to family, work, education, social mobility, and labor relations in the context of changing social institutions.

Ms. Hareven

Offered every year

145 U.S. HISTORY THROUGH THE NOVEL/ Lecture, Discussion

An examination of some of the major events and topics of U.S. history through historical novels, including works by Gore Vidal, Robert Penn Warren, Norman Mailer, and others, from the American Revolution to World War II.

Mr. Formisano

Offered every year

200 AMERICA'S FORMATIVE YEARS/ Lecture, Discussion

The basic institutions of American civilization and the prevailing attitudes of the present were shaped in large measure during the colonial era. This course deals with the foundations of such institutions as the family, church, and local community in America as well as the development of representative political institutions. The aim of the course is to analyze the reasons for two major tendencies that seemed to develop in the American colonies: the erosion of traditional European attitudes toward authority and the emergence of a psychology of accommodation resulting from the pressures arising from the increasingly pluralistic character of the population.

Mr. Billias

Offered every other year

201 ERA OF THE AMERICAN REVOLUTION/ Lecture, Discussion

This course analyzes American society in the prerevolutionary period. Particular

emphasis is upon the ideological and political developments that led to the War of Independence.

Mr. Billias

Offered every other year

202 U.S. CONSTITUTION TO AMERICA'S SECOND WAR OF INDEPENDENCE/ Lecture, Discussion

An analysis of the American revolutionary experience, political theories in the making of the federal Constitution, and problems of the new Federal government, and developments in the American political tradition through the Jeffersonian and Madisonian eras.

Mr. Billias

Offered every other year

204 INTERPRETATIONS OF AMERICAN HISTORY/ Colloquium

An undergraduate-graduate course; undergraduates may enter with the permission of instructor. (See course description under History 304.)

Staff

Offered every other year

206 NINETEENTH CENTURY U.S. POLITICAL HISTORY/ Lecture, Discussion

An introduction dealing with the emergence of political parties, the Civil War and Reconstruction, the Gilded Age, third parties, Populism, and social movements, within a perspective emphasizing the shaping of modern American politics.

Mr. Formisano

Offered every other year

208 THE U.S., 1900-1945/ Lecture, Discussion

A survey of the U.S. from the progressive era through World War II. The course emphasizes the emergence of modern American culture, the rise of an imperial presidency, and the growth of government intervention in the economy from Teddy Roosevelt to Franklin Roosevelt. Topics include the decline of socialism, the impact of war on American society, and the persistence of racial and ethnic conflict.

Mr. Little

Offered every other year

209 THE U.S. SINCE 1945/ Lecture

A survey of U.S. political, social, and cultural history from Hiroshima to Watergate. The course focuses on the growth of an affluent society, the emergence of an imperial foreign policy, and the rise of the military-industrial complex. Major topics include anticommunism at home and abroad, the impact of the mass media on postwar American culture, the civil rights revolution, the Vietnamese War, and the continuing impact of "the sixties."

Mr. Formisano

Offered every year

212 U.S. URBAN HISTORY/ Lecture, Discussion

Examines major themes in the social, economic and cultural development of American urban society from colonial origins to the present. The course focuses on the process of urbanization and on the adaptation of various social groups and classes to urban life and to the complexity of urban society. It also examines the transformation of urban neighborhoods and ghettos, social reform movements in the city, and urban planning.

Ms. Hareven

Offered every year

217 AMERICAN FAMILY IN HISTORICAL PERSPECTIVE/ Lecture, Discussion

Explores historical changes in the family kinship and generational relations in American society with cross-cultural comparisons. It examines the relationship

between industrialization and family behavior, the interaction between the family and other institutions (education, work, welfare), and historical changes in the life cycle. Opportunity for research papers.

Ms. Hareven

Offered every year

218 AGING AND THE LIFE COURSE IN AMERICAN SOCIETY/ Lecture, Discussion

Examines the historical changes in the life cycle in American society as they have affected the relations among different age groups and especially the status of older people. It explores the emergence and recognition of different stages of life (childhood, adolescence, youth, middle age, old age) in a changing cultural and social context. Limited to seniors and graduate students. Opportunity for research papers.

Ms. Hareven

Offered every other year

219 HISTORY OF AMERICAN WOMEN

Explores the changing roles of women in American society from colonial times to the present, with special attention to the status and contributions of women in the home, the workforce, and in politics.

Staff

Offered periodically

220 INDUSTRIALIZATION IN COMPARATIVE PERSPECTIVE/ Lecture, Discussion

Examines the process of industrialization and its social consequences. Focuses on the countries that industrialized first (England, the U.S. and parts of Western Europe) and compares them to countries that have industrialized in the twentieth century (Japan) and to those going through the process today. Examines aspects such as changes in organization of work, the division of labor, emergence of an "industrial culture," changes in status of workers and labor relations, demographic changes, and the transformation of the family and its economy. Limited to juniors, seniors, and graduate students. Opportunity for research papers.

Ms. Hareven

Offered every other year

221 AFRICAN/AMERICAN HISTORY

Examines the historical experience of blacks in America, especially from the Civil War to the present. The course focuses on the impact of racism on blacks, and on their many achievements despite the numerous obstacles in their path.

Staff

Offered periodically

225 RACE, CLASS, ETHNICITY IN THE 1960s AND 1970s: BUSING IN BOSTON/ Discussion

The desegregation controversy in Boston is understood by examining the historical and contemporary background of ethnic, class, and race conflicts, educational history, and legal-constitutional issues. Themes and materials range beyond Boston.

Mr. Formisano

Offered periodically

228 RIGHT-WING MOVEMENTS, 1790-1970

Examines Wallace, McCarthyism, American fascism, social justice, the red scare, A.P.A., the know-nothings, anti-Masons, anti-illuminati, and other movements. Prerequisite: permission of instructor.

Mr. Formisano

Offered periodically

229 U.S. ELECTIONS AND PARTIES 1789-1984/ Lecture, Discussion

A broad survey of American politics from the early national period to the elections of 1980 and 1984. Shifting voter coalitions, social movements, and social group behavior are emphasized, as well as different political systems and cultures from the past to the present.

Mr. Formisano

Offered periodically

230 THE ROLE OF THE FEDERAL CONSTITUTION IN AMERICAN HISTORY/ Seminar

An undergraduate-graduate course; undergraduates may enter with the permission of instructor. (See course description under History 330.)

Mr. Billias

Offered every other year

234 HEALTH AND DISEASE IN THE AMERICAN HABITAT

Refer to course description under Geography 234.

Mr. Koelsch

237 U.S. FOREIGN RELATIONS TO 1914/ Lecture, Discussion

Studies the creation of an American continental empire from the Revolution to the Spanish-American War. The course emphasizes the role of the main policy makers (Franklin through McKinley) in shaping American territorial and commercial expansion. Major themes include diplomacy and the making of the U.S. Constitution, the influence of sectional conflict on antebellum foreign policy, and the economic aspects of American expansion after the Civil War.

Mr. Little

Offered every other year

238 U.S. FOREIGN RELATIONS SINCE 1914/ Lecture, Discussion

Students examine the emergence of the U.S. as a major world power in the twentieth century. The course focuses on the domestic sources of foreign policy and the assumptions of the major policy makers (Wilson through Reagan). Important themes include the American response to a revolutionary world since 1910, the increasingly dominant role of the president in the making of U.S. foreign policy, and the changing position of the U.S. in the international economy.

Mr. Little

Offered every year

239 AMERICAN CONSTITUTIONAL LAW

Refer to course description under Government 254.

Mr. Campbell

240 AMERICAN CULTURE AND SOCIETY 1820-1860

Refer to course description under English 280.

Mr. Conron, Ms. Stange

Offered every year

241 AMERICAN THOUGHT AND CULTURE SINCE 1860

Refer to course description under English 281.

Mr. Conron, Ms. Stange

Offered every year

242 POWER IN AMERICAN COMMUNITIES/ Discussion, Research

This undergraduate research seminar introduces students to the basic political science and historical literature concerning power in American cities. Students then do research papers on contemporary or historical power and influence in Worcester.

Mr. Formisano

Offered periodically

243 AMERICAN ANTIQUARIAN SOCIETY SEMINAR IN AMERICAN STUDIES/ Seminar

Given at the A.A.S. (about two miles from Clark), this course affords students an opportunity to do original research in the society's unique holdings. Students should apply in the spring through Mr. Conron (English Department) or Mr. Formisano.

A.A.S. Staff

Offered every year

244 WAGING WORLD WAR II: WAR AND SOCIETY IN AMERICA/ Lecture, Discussion

War is viewed as an extension of the social organization of a given society; the underlying premise of the course is that one can learn a great deal about a society by analyzing the way in which it wages war. A comparative history approach is taken, with stress on the commonalities experienced by the major warring societies—the United States, Britain, France, Russia, China, Germany, Italy, and Japan. The focus is on the centralized bureaucracy of warring states and their standing military forces; the relationship between social, political, and military forces; and the relationship between social, political, and military structures.

Mr. Billias

Offered every year

245 U.S. FOREIGN POLICY: MIDDLE EAST

Refer to course description under Government 245.

Mr. Lane

246 CLARK IN HISTORICAL PERSPECTIVE/ Seminar

After several weeks of common reading on the role of higher education in American culture—emphasizing the rise, character, and impact of the American university—members of the seminar work intensively with archival material on Clark-related topics of interest to them.

Mr. Koelsch

Offered every other year

247 AMERICAN SCIENCE SINCE 1890/ Seminar

During the first half-semester, students read and discuss selected recent writings in the social and intellectual histories of seven sciences: physics, chemistry, biology, geology, meteorology/climatology, anthropology, and geography, in the period since the beginnings of Clark. During the second half, seminar members work on research papers in specific areas of one of those sciences.

Mr. Koelsch

Offered every other year

285 THE MULTINATIONAL CORPORATION/ Proseminar

Considers the growth and development of the multinational corporation from the late nineteenth century through the 1970s. The course examines why multinationals expand abroad, how they affect the host country, and in what manner they influence U.S. foreign policy. Emphasis on case studies from the oil, mineral, and utilities industries. Prerequisite: permission of instructor.

Mr. Little

Offered every other year

291 ADVANCED TOPICS IN INTERNATIONAL RELATIONS/ Seminar

Substantive content of this course varies with the interests of the instructor. Possible topics include issues in international development, multinational corporations, the new international economic order, or issues in U.S. foreign policy. The course is designed principally for advanced students concentrating in international relations. Other students may be admitted by permission of the instructor.

Mr. Little

Offered every year

EUROPEAN HISTORY

30 UTOPIANISM AND EUROPE'S FUTURE/ Lecture, Discussion

Readings, discussions, and short papers, using utopian novels (Orwell's *1984* and Huxley's *Brave New World*), social commentaries and lectures to focus on the course and prospects of modern European society. Not an introductory course for the major. Fulfills the *verbal expression* requirement.

Mr. Borg

Offered every year

70 OUR EUROPEAN ROOTS: WESTERN CIVILIZATION FROM THE "FALL" OF ROME THROUGH THE RENAISSANCE AND REFORMATION/ Lecture

Principal goal is to familiarize students from all disciplines with the basic outlines of the developments of Western society and, therefore, the character of our collective identity. For the would-be history major, a secondary goal is the presentation of varieties of historical "angles"—cultural, political and military, economic and social—and the integration of these analytical approaches into a coherent, popular narrative. The medieval period is emphasized because our modern history is rooted in it. Students are advised to take both History 70 and 71 since they are parts of a whole, but either course may be taken without the other. Two exams, one short paper, final exam.

Mr. Lucas

Offered every year

71 OUR EUROPEAN ROOTS: WESTERN CIVILIZATION FROM THE SEVENTEENTH CENTURY TO THE PRESENT/ Lecture

Goal is the same as History 70. Course begins with the military revolution of the sixteenth century, the revolution of the seventeenth century, and the Enlightenment of the eighteenth century and concludes with an examination of our contemporary spiritual, material, and institutional existence in the light of our past development. Students are advised to take both History 70 and 71 since they are parts of a whole, but either course may be taken without the other. Two exams, one short paper, final exam.

Mr. Lucas

Offered every year

121 INTRODUCTION TO GREEK CULTURE, ART, AND ARCHAEOLOGY

Refer to course description under Classics 121.

Mr. Burke

157 THE AGE OF NERO/ Lecture, Discussion

Refer to course description under Classics 157.

Mr. Burke

216 WOMEN IN BRITAIN AND AMERICA, 1800 ON/ Lecture, Discussion

This course will explore female labor, women's marital and sexual roles, and women's participation in social and political reform movements in both Great Britain and America in the nineteenth and twentieth century.

Staff

Offered every year

250 THE FORMATION OF THE MODERN STATE: GROUP CONSCIOUSNESS, INDIVIDUALISM, AND SOCIAL ORGANIZATION IN "OLD EUROPE," 1550-1789/ Lecture, Discussion

An examination of pre-French Revolutionary Europe as a corporative and customary political culture; a study of how that culture was altered by militarism, absolutism, mercantilism, early capitalism, modern science, and the requirements of the international system of European states; an appreciation of the

social and ideological legacies of the ancient regime in our own time. Six two-page papers, take-home final exam, class participation.

Mr. Lucas

Offered every other year

251 THE COMPARATIVE STUDY OF REVOLUTIONS: THE FRENCH REVOLUTION OF 1789 AND THE BEGINNINGS OF MODERN REVOLUTIONS/ Lecture, Discussion

An analysis of old and new ideas of revolution including ritual, resistance, reactionary restoration vs. innovation; the "democratic" revolution; the psychology, sociology, and social psychology of revolutionary behavior; religion and revolution; violence; and the relevance of the French Revolution to twentieth-century issues. One long paper, two exams, class participation.

Mr. Lucas

Offered every other year

252 NINETEENTH-CENTURY EUROPE/ Lecture, Discussion

Centers around the problems and dilemmas of various European political societies as they responded to the tug of modernity during the century of European preeminence throughout the world.

Mr. Borg

Offered every other year

253 TWENTIETH-CENTURY EUROPE/ Lecture, Discussion

Concentrates on the characteristic problems of Europe in a century of war, economic convulsion, and political instability.

Mr. Borg

Offered every year

255 NARRATIVE IN ANCIENT HISTORICAL WRITING

Refer to course description under Classics 250.

Mr. Burke

Offered every other year

257 EUROPE SINCE 1945/ Proseminar

Readings and discussions in modern Europe since the second World War.

Mr. Borg

Offered every year

258 ENGLAND'S "OLD REGIME"/ Lecture, Discussion

Examines the formation of the peculiarities of the English "character," state, society, religions, and the world's first modern industrial economy, 1500-1850. To help students grasp these peculiarities, a special emphasis is placed on comparisons of England's experience with continental Europe's and on the use of historical psychology.

Mr. Lucas

Offered every other year

259 MODERN GERMANY/ Lecture, Discussion

Offers an examination of the convulsive course of German history over the past century.

Mr. Borg

Offered every other year

264 REVOLUTIONARY RUSSIA, 1900-1924/ Lecture, Discussion

Central themes are: (1) the collapse of the tsarist regime and the rise of Soviet power and (2) the transformation of a social revolution into an unprecedented experiment of mobilizing a backward empire for global power. For the human dimension of this historic drama, students read Pasternak and Sholokhov and write a short paper on each.

Mr. Von Laue

Offered every other year

271 IN SEARCH OF HUMANITY: EIGHTEENTH-CENTURY EUROPEAN VALUES/ Lecture, Discussion

The Enlightenment and its heirs and critics: the scientific revolution, philosophical reformism, and early conservative romanticism. Emphasis on rival perceptions of man's psychological and social nature, history, and aesthetic and religious sensibilities as seen through great secondary treatments of the Enlightenment (which also introduce the student to various approaches to intellectual history) and original sources: Hume, Beccaria, Rousseau, Condorcet, Kant, Burke, Savigny. Four two-page papers, final examination, class participation.

Mr. Lucas

Offered every other year

272 IN SEARCH OF HUMANITY: NINETEENTH-CENTURY EUROPEAN VALUES/ Lecture, Discussion

The elaboration of the Enlightenment by its heirs and critics. Emphasis same as in 271, but focus shifts to an analysis of political and economic liberalism, social Darwinism, racism, and "utopian" socialism in England and France followed by an analysis of nationalism, Marxism, positivism, old and new conservatism, and the reassessment of the values and progress of European civilization among principally Italian and German thinkers. Approximately four two-page papers; final examination, class participation.

Mr. Lucas

Offered every other year

292 PROSEMINAR ON THE WRITING OF HISTORY

This course attempts to teach students how to write analytical and synthetic research papers and how to write them well. It introduces students to problems of studying history by learning about the aspirations, advantages, and disadvantages of "historicism." Open to all, but permission of instructor is required. Three papers, each rewritten once, and class participation.

Mr. Lucas

Offered periodically

JEWISH HISTORY

140 THE JEWISH MYSTICAL TRADITION

Refer to course description under Hebrew 140.

Mr. Waldoks

Offered every other year

174 THE JEWISH EXPERIENCE/ Lecture, Discussion

A survey of the history of the Jewish community and the development of Judaism from the era of Alexander the Great (c.325 B.C.E.) to the present. This course examines the major political, religious, social and economic trends of each period as they affected the evolving Jewish community and the development of Judaism, and emphasizes elements of change and continuity as well as the interaction of the Jewish community with the larger culture/community. Fulfills historical perspective requirement.

Staff

Offered every year

223 THE AMERICAN JEWISH EXPERIENCE: A HISTORY OF JEWS IN THE UNITED STATES/ Lecture, Discussion

A selected survey of the role of Jews in the United States: the creation of Jewish institutional life; the relation of Jews to their neighbors; the waves of immigration; melting pot vs. ethnicity, assimilation vs. acculturation; the rise of denominations; the emergence of American Jewry in world affairs; American Jewry and the State of Israel; the future of American Judaism.

Mr. Waldoks

Offered every other year

262 JEWS AND CHRISTIANS IN THE ANCIENT WORLD

Refer to course description under Classics 262.

Mr. Burke

273 WOMEN IN ANTIQUITY/ Lecture, Discussion

A study of the lives of women and the roles of goddesses in the societies of the ancient Near East, ancient Israel, Greece, Rome, the early Christian community, and the early rabbinic community. Attention is given to the depictions of women and goddesses in ancient literary sources and in archaeological material.

Staff

Offered every other year

274 RABBIS, ROMANS, AND RUINS/ Lecture, Discussion

The development of Judaism from the reign of Alexander the Great (c. 325 B.C.E.) to the seventh century C.E. An examination of the constituents of Jewish culture in relation to the major political, social, religious, and economic trends of the Hellenistic world and of late antiquity as revealed by literary and archaeological sources. Special attention is given to the diversity of first-century Judaism and to the emergence of Christianity.

Staff

Offered every other year

276 MODERN JEWISH HISTORY/ Lecture, Discussion

Discusses the emergence of the Jew into modern society after the French Revolution. The political and ideological struggle over emancipation and adjustment are traced through the growth of Jewish denominationalism in Western Europe. The competing ideologies of Jewish nationalism (including those of both Zionist and non-Zionist) character are discussed in the context of Eastern European Jewry and its unique contribution to modern Jewish identity. The course concludes with an examination of the Weimar Republic in Germany (1918-1933) and the independent Polish State (1918-1939).

Mr. Waldoks

Offered every other year

277 HISTORY OF ZIONISM/ Lecture, Discussion

Examines the development of Zionist ideologies and the emergence of Zionism as a political movement in response to the events of nineteenth- and twentieth-century Europe and the Middle East. Attention is also paid to the political and social history of the state of Israel and to the Arab- Israeli conflict.

Mr. Waldoks

Offered every other year

278 HOLOCAUST: THE DESTRUCTION OF EUROPEAN JEWRY, 1933-1945/ Lecture, Discussion

Discusses the rise of political anti-Semitism; the place of the Jew in Eastern and Western European Society; the rise of German *volkist* ideology and its place in the creation of Nazism. Close attention is paid to Jewish and non-Jewish reaction and resistance to Nazism and its policies of mass murder. The historical, philosophical, and theological implications of the Holocaust and its aftermath are reviewed.

Mr. Waldoks

Offered every other year

LATIN AMERICAN HISTORY

177 LATIN AMERICAN HISTORY SINCE 1825/ Lecture, Discussion

A survey of Latin American nations from independence to the present with emphasis on the twentieth century. Major themes include the persistence of neocolonial social and economic structures, the emergence of nationalist and

revolutionary movements after 1900, and U.S.-Latin American relations.
Mr. Little Offered every year

AFRICAN HISTORY

178 POLITICS AND HISTORY OF SOUTH AFRICA

Refer to course description under Government 178.
Ms. Grier

179 THE HISTORY OF TRADITIONAL AFRICA

An introduction to the history of Africa south of the Sahara. The course begins with the early civilizations of Kush, Axum, Ghana, Mali, Songhai, Benin, the Zanj, Congo, and Zimbabwe and continue through to the arrival of Europeans. Attention is given to eastern, western, and southern Africa. The approach is largely historical and anthropological.
Mr. Ford Offered every other year

180 HISTORY OF MODERN AFRICA

Introduces students to the major themes of modern African history. Begins with an orientation to precolonial Africa and then considers four main periods: (1) the imperial years, (2) the struggle for independence, (3) the 1960s as a decade of independence, and (4) the 1970s as a search for identity and development. Focus is primarily on the years since 1945.
Mr. Ford Offered every other year

286 CITIES IN AFRICA

Considers historical dimensions of African urbanization with special attention to the spatial and functional role of cities. Agricultural, administrative, political, market, and industrial uses are examined. The impact of urbanization on African cultural values also is examined.
Mr. Ford Offered every other year

290 DEVELOPMENT PROJECT MANAGEMENT/ Seminar

Refer to course description under International Development 290.
Mr. Ford Offered every year

ASIAN HISTORY

80 INTRODUCTION TO MODERN ASIA/ Lecture

A survey of modern historical trends in India, China, Japan, Southeast Asia, and Korea. Through political biographies, literary selections and general histories, the course compares native traditions, colonial experiences and postcolonial developments in Asia since roughly 1800.
Mr. Ropp Offered every year

181 TRADITIONAL CHINA

Focuses on Chinese life, institutions, and culture from the earliest times through the mid-nineteenth century. Creative literature, philosophical writings, and selected primary documents are used to supplement information presented in the textbook and lectures.
Mr. Ropp Offered every other year

182 MODERN CHINA

Introduces students to events, personalities, and concepts of particular importance for understanding China's history from China's confrontation with the West

in the mid-nineteenth century through the present. Readings that present the Chinese view of events will be used to supplement interpretative studies by Western scholars.

Mr. Ropp

Offered every other year

184 MODERN JAPAN: THE RISE OF A GREAT INDUSTRIAL POWER/

Lecture

A survey of Japanese political, social, economic, diplomatic, and cultural history from approximately 1800 to the present. The main theme of the course is the century-long transformation of Japan from an isolated feudal society into one of the great industrial powers of the modern world.

Mr. Ropp

Offered every other year

280 ASIAN HISTORY/ Seminar

See History Department chair for description.

Mr. Ropp

Offered periodically

281 THE PEOPLE'S REPUBLIC OF CHINA/ Lecture, Discussion

A general survey of life in the People's Republic of China from 1949 to the present. Includes a general history of the People's Republic, and special attention to such themes as politics, society, family life, agriculture, industry, science and technology, literature, the arts, foreign relations, law, medicine, and education.

Mr. Ropp

Offered every other year

282 CHINESE WOMEN IN LITERATURE AND SOCIETY/

Lecture, Discussion

Examines the changing role of women in Chinese society from the seventeenth century to the present, primarily through the reading and discussion of Chinese literature in English translation.

Mr. Ropp

Offered every other year

INTERNATIONAL DEVELOPMENT

125 DEVELOPMENT PROBLEMS/

Lecture, Discussion

An introduction to the study of development. The course considers the historical evolution of the concepts of economic growth and development; the nature of development; five alternative approaches to development ranging from conventional theories of capital intensive investment to more radical theories of labor intensive investments; and for a conclusion, an assessment of development policies of governmental and nongovernmental organizations. Historical, geographic, and political considerations will receive special attention.

Ms. Thomas

Offered every year

283 CLIMATE AND HISTORY: AN ANALYSIS OF THE INFLUENCE OF CLIMATE ON HISTORICAL CHANGE/ Lecture, Discussion

An inquiry into the influence climatic patterns have exerted on historical events. The course looks primarily at Africa and the U.S. In Africa, attention focuses on the Sahel over the last eight to ten thousand years, but with special focus on the last two thousand years. In southern Africa, climate and lifestyle of five different population groups are compared with a similar environmental setting in the great plains of North America. Special attention is given to the Turner hypothesis for institutional development on the frontier.

Mr. Ford

Offered periodically

GENERAL GLOBAL HISTORY

90 SURVEY OF TWENTIETH-CENTURY GLOBAL HISTORY/ **Lecture, Discussion**

Starting with a brief assessment of the world in 1900, the course offers historical background to the contemporary global order. It is designed to help students view their lives within a worldwide perspective in terms of politics, economics, and culture as well as the human costs and individual resilience shown during the great crises of this century. Students write several essays to integrate class reading, lectures, and discussions.

Mr. Ford

Offered every year

256 THE EXPANSION OF EUROPE, 1415 TO THE PRESENT

Staff

Offered periodically

SPECIAL PROJECTS

295 CAPSTONE/ **Proseminar, Discussion**

Readings and discussions in the history of the idea of history, from Thucydides until the present.

Mr. Borg, Staff

Offered every year

296 PRACTICUM IN THE TEACHING OF HISTORY

Variable credit.

Mr. Ford

299.1 DIRECTED READINGS/ **Tutorial**

Undergraduates, normally juniors and seniors, may design a directed readings course to consist of a sequence of structured readings on a given topic to be approved and directly supervised by an instructor. Prerequisite: permission of instructor. Offered for variable credit.

Staff

299.2 RESEARCH PROJECTS/ **Tutorial**

Undergraduates, normally juniors and seniors, may construct an independent research course with an instructor of their choosing. Prerequisite: permission of instructor. Offered for variable credit.

Staff

DEPARTMENTAL HONORS

299.8 HONORS THESIS RESEARCH

Honors students receive up to two credits for thesis research. Honors students preparing for the comprehensive exam receive credit for their reading under History 297. Offered for variable credit.

Staff

Offered every year

299.9 INTERNSHIP

The student who undertakes an interdisciplinary internship for more than two credits may receive up to two credits in history and the remainder in another department. Prerequisite: permission of instructor and of chair. Offered for variable credit.

Staff

GRADUATE COURSES

301 STUDIES IN EIGHTEENTH-CENTURY AMERICAN HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Mr. Billias

304 INTERPRETATIONS OF AMERICAN HISTORY/ Colloquium

Takes a historiographical approach to the literature in American history from the beginning of the colonial period until the end of America's second War of Independence.

Staff

Offered every other year

315 STUDIES IN ECONOMIC HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Staff

330 THE ROLE OF THE FEDERAL CONSTITUTION IN AMERICAN HISTORY/ Researchers' Seminar

Designed to trace the impact of American constitutional ideas from two different perspectives: the effect of the Federal Constitution of 1787 on the rest of the world; and the effect of the world on Americans in terms of their changing perceptions and attitudes toward the Constitution as they witnessed their constitutional ideas being used abroad.

Mr. Billias

Offered every other year

331 AMERICAN POLITICAL HISTORY/ Researchers' Seminar

U.S. political history: methods and topics. Concentration is on topics selected by instructor and students, with special attention to interdisciplinary methods and most recent works in political history.

Mr. Formisano

Offered every year

335 STUDIES IN NINETEENTH-CENTURY U.S. HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Staff

336 STUDIES IN AMERICAN CONSTITUTIONAL HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Staff

337 STUDIES IN DIPLOMATIC HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Mr. Little

341 STUDIES IN AMERICAN THOUGHT AND CULTURE/ Tutorial

Independent studies. Offered for variable credit.

Mr. Koelsch, Staff

342 STUDIES IN AMERICAN INTELLECTUAL HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Staff

344 STUDIES IN RECENT AMERICAN HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Mr. Little, Staff

350 STUDIES IN EARLY MODERN EUROPEAN HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Mr. Lucas

351 STUDIES IN EUROPEAN INTELLECTUAL HISTORY/Tutorial

Independent studies. Offered for variable credit. Papers and discussion.

Mr. Lucas

352 STUDIES IN MODERN EUROPEAN HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Mr. Borg

359 STUDIES IN RUSSIAN HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Staff

380 STUDIES IN AFRICAN HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Mr. Ford

383 STUDIES IN CHINESE HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Mr. Ropp

395 PRACTICUM IN THE TEACHING OF HISTORY

Offered for variable credit.

Mr. Ford, Staff

399 GRADUATE READINGS

Offered for variable credit.

Staff

400 THESIS RESEARCH

Offered for variable credit.

Staff

International Development and Social Change

PROGRAM FACULTY

Richard B. Ford, Ph.D., *director, I.D. research*: African history, resource management and international development

Barbara P. Thomas, Ph.D., *director, I.D. teaching*: community organization, women and public policy, peasant behavior

Eileen Berry, Ph.D.: household economic behavior, resource management and international development—African focused

Stanford Hagopian-Gerber, Ph.D.: Caribbean politics, migration, family, development of small islands

Jeffrey Jones, Ph.D.: Central America, small farmer behavior, forestry resource management

Ann Seidman, Ph.D.: regional economics, African development, project analysis

ADJUNCT FACULTY

- Leonard Berry, Ph.D.: resource management, physical systems, regional planning, rural development, data systems
- Robert Bradbury, Ph.D.: health planning, health systems analysis, health administration
- Ronald J. Eastman, Ph.D.: geographic information systems, remote sensing and digital image processing, cartographic design and production
- Jacque L. Emel, Ph.D.: water resources, resource management
- Cynthia Enloe, Ph.D.: bureaucratic politics, comparative race and ethnicity, politics of women
- Beverly C. Grier, Ph.D.: African politics, international development
- Perry O. Hanson, Ph.D.: microcomputers and development, research methods, quantitative methods
- Susan Hanson, Ph.D.: urban-social, transportation
- Robert C. Hsu, Ph.D.: economic development, comparative economic systems, international economics
- Douglas L. Johnson, Ph.D.: arid land management, cultural ecology, human geography, environment and development
- Gerald J. Karaska, Ph.D.: regional economic development
- Roger Kasperson, Ph.D.: political, hazards
- Robert W. Kates, Ph.D.: theory of human environment, hazards
- Laurence A. Lewis, Ph.D.: agriculture and the physical environment in the tropics, rural agricultural development, Africa, Caribbean
- Richard Peet, Ph.D.: political economy, Marxist geography
- Frank Puffer, Ph.D.: regional economics, African economic development, health economics
- Paul S. Ropp, Ph.D.: Asian history, comparative history
- Robert Rosh, Ph.D.: international relations, arms in the Third World
- Harry E. Schwarz, B.C.E., P.E.: resource management with emphasis on water resources, environmental impact of development, water resources planning and management
- Robert Snow, Ph.D.: rural sociology, export-oriented industrialization in Southeast Asia, project analysis and evaluation
- Zenovia A. Sochor, Ph.D.: Soviet politics, revolutions, Superpowers and the Third World
- Harry J. Steward, Ph.D.: cartography, remote sensing, mapping systems
- Richard Tucker, Ph.D.: environmental history of the Himalayas and tropics, history of India, colonial systems
- B. L. Turner II, Ph.D.: cultural ecology, agriculture

PROGRAM

International Development and Social Change (ID) is an interdisciplinary program with teaching, training, and research components. It offers courses at the B.A. and M.A. levels. It was founded in the mid-1970s as a cross-disciplinary effort among the Graduate School of Geography, the Environmental Affairs Program, and the Departments of Government, Economics, and History. Subsequently this interdisciplinary approach has been enhanced by the incorporation of anthropology, programmatic collaboration with the Graduate School of Management, and the establishment of the Center for Technology, Environment, and Development (CENTED) of which ID is a founding partner.

The teaching program is designed to introduce students to the complex issues involved in international development, acquaint them with a range of research activities, and prepare them for careers and participation in international fields.

It attempts to orient majors to the changing world in which we live and to the increasing role developing societies play in the interdependence of the world's social, economic, and political systems. The program encourages nonmajors to participate in its courses, seminars, or other international development activities. Undergraduates are encouraged to work out a double major with ID and one of the cooperating departments.

Majors are expected to acquire basic skills of economic and social analysis as well as a generalized orientation toward development and social change. These skills and attitudes will be useful for any number of careers in either the private or public sector that deal with developing areas of the world, or for further graduate study and specialization. To attain these skills students in the program work in a combined graduate-undergraduate setting, which blends the breadth of liberal arts with the specialization of professional training. Thus, the curriculum combines existing departmental courses, new cross-disciplinary courses, and applied research activity.

The research program offers faculty and students opportunities to work individually and cooperatively on topics of concern relating to international development and social change. Recent research projects have included:

- developing a national environmental monitoring system in collaboration with Sudan's Institute of Environmental Study
- assisting with regional planning for municipal development in three secondary cities in Ecuador
- working with the National Environment and Human Settlement Secretariat in Kenya to produce district environment assessment profiles
- establishing trends in renewable resources in five East African countries.

In all our research, we are concerned not only with the relationship among technological intervention, finite resources, and social change in the developing world, but also with relations between the poor and the more affluent nations. Associated with these collaborative research efforts are seminars, symposia, internships, and summer research activities.

The Program for International Development and Social Change is flexible, permitting students to participate in designing their own interdisciplinary curriculum for the study of development problems. It aims to meet the needs of three different groups of students:

First, it provides one of the few programs in the United States that permits undergraduate students to take a liberal arts B.A. degree focused on development. Students may major in international development or they may take international development as a double major in conjunction with a related discipline such as geography, economics, government, or sociology.

Second, it provides an opportunity for undergraduates qualified to go on in the program to complete a five-year B.A./M.A. degree with a view to a career in the development field.

Third, it provides a self-contained program for students coming from other universities who want to obtain the necessary background and complete an M.A. in order to pursue a career in the development field.

UNDERGRADUATE PROGRAM

Undergraduates majoring in international development are expected to:

1. attain an understanding of the development process and its political, economic, historical, theoretical, and environmental aspects;

2. master basic skills including quantitative skills and techniques of economic and social analysis, and are strongly encouraged to develop competence in a foreign language;

3. develop an investigative/research approach to an actual problem and attempt to apply the growing body of theoretical knowledge in an internship experience;

4. pursue a career track—for example, resource management, or women in development—chosen in consultation with a faculty adviser.

Course Requirements

1. *Basic orientation:* Majors take the introductory *Development Problems* course, development economics, and three additional core courses in politics, resource management, and sociocultural issues. Students transferring from other majors or universities may substitute equivalent courses. Unless they otherwise satisfy the prerequisites for development economics (with permission of instructor), they also must take Economics 10 and 11, *Issues and Perspectives* and *Principles of Economics*.
2. *Area of specialization:* Majors will take at least four courses in an area of specialization they select in consultation with an ID faculty adviser. Students may follow the pattern set out in one of several established tracks—for example, resource management, rural development, anthropology, or health management—or a student may design a course sequence, subject to approval by an appropriate faculty member, that creates a new focus. In every case, the area of concentration should be looked upon as an opportunity for students to link their interest in development with a focus in a specialized field.
3. *Skills courses:* Majors take social sciences research methods and two of the following—computer science, statistics, or cartography. They should decide, in consultation with a faculty adviser, which language proficiency would be most helpful for their chosen development area.

Master's Program

The Master's Program in International Development affords the graduate student interested in pursuing an independent course of study the opportunity to work closely with faculty members from a broad range of disciplines. The program allows the student a large degree of flexibility in terms of thesis research while emphasizing a core of required classes designed to develop the student's quantitative, analytical, and research skills. These include development theory, project analysis and management, research methods and class work, or competence in statistics, computer science, and/or cartography. A minimum of eight course units is necessary. There are opportunities for internships with development agencies in the United States; the program also is developing internship opportunities overseas.

Students are encouraged to develop their own fields of specialization in preparation for thesis research, which should be undertaken in the second year of study. Specializations selected by graduate students include women and development, resource management, development theory, rural development, international political economy, household economic behavior, local organization and participation, comparative ethnic relations. The thesis is normally completed in the third or fourth semester and may include field research.

COURSES

015 INTRODUCTION TO ECONOMIC GEOGRAPHY/ Lecture

Theories of the geography of the production of human existence out of nature are presented. The course emphasizes contemporary economic, social, and

environmental problems. These include overpopulation, environmental crises, world food problems, uneven economic development, the spatial movement of industry and jobs, and regional decline and unemployment. The course concludes by discussing the disappearance of unique regional economies and cultures and the emergence of a world capitalist economy, culture, and consciousness.

Mr. Peet, Mr. Karaska

Offered every year

108 WORLD POPULATION/ Lecture

Is the population of our world growing too fast? Will the world encounter an overshoot leading to doomsday? To address these questions requires an understanding of the nature of population growth and sociocultural responses to it. This course develops an understanding of this relationship through a mix of demography and population geography. World patterns of population distribution, history, and dynamics are explored, and the future of population problems is addressed. Writing course or two exams.

Mr. Turner, Mr. Johnson

Offered every other year

117 REVOLUTION AND POLITICAL VIOLENCE/ Lecture, Discussion

Analysis of the concept, the causes, and the process of revolution. Distinctions are made between revolution and other forms of political violence such as terrorism, rebellion, and *coups*. The course examines theories of revolution as well as specific case studies. The Russian and Chinese revolutions are studied as twentieth-century prototypes; comparisons are then drawn to recent revolutions in the Middle East and Latin America.¹

Ms. Sochor

Offered every year

120 INTRODUCTION TO SOCIAL ANTHROPOLOGY/ Lecture, Discussion

Analysis of traditional and nontraditional societies with a focus on social structure and social process. One of the main purposes of the course is to help the student become less ethnocentric and culture-bound when analyzing national and international events. Class materials are drawn from various countries including those in Africa, the Caribbean, the Middle East, and Latin America.

Mr. Hagopian-Gerber

Offered every year

125 DEVELOPMENT PROBLEMS/ Lecture, Discussion

Introduces students to the major issues and debates in the field of international development, by addressing a variety of concerns relevant to the Third World including colonialism, development and underdevelopment, growth and equity, trade and aid, North-South relations, emergence of class, and political ideologies. The class focuses on specific problems of food, population, and resources. Case materials are drawn from a number of countries including India, China, Kenya, Tanzania, Mexico, Brazil, and Bangladesh.

Ms. Thomas

Offered every year

126 INTRODUCTION TO THE CARIBBEAN AND LATIN AMERICA/ Lecture, Discussion

Although much attention and discussion center around the Caribbean, Latin America, and Central America, most of the discussion is based on "opinion" instead of knowledge of these areas. Lack of information and reason has been characteristic of both "left" and "right" political and economic views of the southern hemisphere. This course explores a vital region of the world, one which has increasing political and economic consequences for world order; students develop an understanding based on knowledge of the area. Lectures are drawn from the professor's eighteen years of experience of the region. Nation-states

analyzed include El Salvador, Nicaragua, Cuba, and Jamaica. Topics explored include politics of the region, problems of development, social economic principles, ethnicity, and race. Extensive slides taken by the instructor are shown; other audio-visual aids such as movies, tapes, and records also are used.

Mr. Hagopian-Gerber

Offered every year

127 POLITICAL ECONOMY OF UNDERDEVELOPMENT/ Lecture

Do conventional explanations of underdevelopment strike you as false and unconvincing? A powerful and refreshing alternative perspective exists in Marxist and neo-Marxist theories of social change. This course reviews the main currents within this rich stream including theories of dependency, imperialism, accumulation world systems, unequal exchange, and mode of production. Marxist concepts are used to examine the international role of capital, multinational corporations, and regional decline. Finally, the course presents alternative models of socialist development.

Mr. Peet, Staff

Offered every year

128 THE FAMILY AND SEX ROLES IN CROSS CULTURAL PERSPECTIVE: AN ANTHROPOLOGICAL APPROACH/ Lecture, Discussion

This course concerns itself with family organization and gender roles in traditional and modern societies. Topics explored include the various ways the family is structured; the socialization process for males and females; the changing role of males and females in comparative perspective; the nature and function of kinship systems; the extended family; anthropological and biological views concerning the nature of male and female roles; the functions of the women's liberation movement with respect to child rearing, the effects of the women's liberation movement on males, females, and the economic process. Some time is spent discussing the changing role of elders within modern industrial states and the traditional role of elders in traditional and primitive societies. These and other topics are viewed in comparative perspective. Countries and regions examined include the Middle East, Africa, the Soviet Union, Pacific, and the United States. Course requirements include two examinations and one moderate research paper to be decided on after discussion with the instructor. Some films are screened, and guest speakers present varying views to the class.

Mr. Hagopian-Gerber

Offered every year

136 SUB-SAHARAN AFRICA: ISSUES AND PROBLEMS/ Lecture, Discussion

Explores issues and problems confronting sub-Saharan Africa, including the legacy of colonialism, establishment of nation-states, changing production systems, the roles of women in existing economic structures, conflict in the Horn of Africa, relations with South Africa, the emergence of class, and strategies for socioeconomic change. Readings include contemporary literature, public documents, journals and newspapers, and secondary sources. Illustrative material is drawn selectively from East, West, and Southern Africa.

Ms. Thomas, Ms. Grier

Offered every other year

139 COUNTRY AND CULTURE/ Lecture

The landscape can be read! Be it a vast tropical rainforest with an occasional clearing or an intensively cultivated river valley in New England, the rural landscape is the product of interaction between place (environment) and people (culture). This course traces the evolution of rural landscapes through time from early hunter/gatherers to modern suburban encroachment on rural areas. Emphasis

is placed on ecological principles that help explain the techno-cultural modification of rural places.

Mr. Johnson, Mr. Turner

Offered every year

144 COMPARATIVE RACE AND ETHNIC RELATIONS/ Lecture

Both race and ethnicity have played and still play a vital role in local, national, and international affairs. For example, to understand the problems of the Middle East, it is vital to understand the role that ethnicity plays in local life, attitudes toward other people, and politics. This course enables students to understand and appreciate the nature of immigration, the experiences that migrants encounter in a new location, and the problems that migrants face. It is also hoped that students will get a better appreciation of their own historical and cultural backgrounds. Guest lecturers present material dealing with the Middle East, Africa, Latin America, and the Caribbean.

Mr. Hagopian-Gerber

Offered every year

169 INTRODUCTION TO INTERNATIONAL RELATIONS/ Lecture

Refer to course description under Government 169.

Mr. Rosh

175 CULTURAL ECOLOGY IN ARID LANDS/ Lecture, Discussion

Drylands are risky and often inhospitable places in which to live. Yet people choose to occupy such places and to wrest a living from sparse and scattered resources. Those farmers, herders, hunters, and urban dwellers who are successful have coping strategies for dealing with drought, desertification, and environmental change. Comparison of these strategies in both developing and industrialized societies identifies obstacles to and opportunities for successful management of drylands in support of a growing population.

Mr. Johnson

Offered every other year

176 COMPARATIVE ECONOMIC SYSTEMS/ Lecture

Surveys both the major theoretical models of economic systems and the actual workings of contemporary economic systems. Selective aspects of mixed economies, market socialist economies, and centrally planned economies are examined. Topics include the indicative planning in France, permanent employment system in Japan, industrial democracy in Sweden, workers' self-management in Yugoslavia, economic reforms in Hungary, and resource allocation in the U.S.S.R.

Mr. Hsu

Offered every year

177 CHINESE AND JAPANESE ECONOMIES/ Lecture

A comprehensive survey of the Chinese and Japanese economies—their development, institution, and policies. Topics include historical background, agricultural development, industrial organization, fiscal and monetary policies, employment and labor, Sino-Japanese relations, and relations with the U.S.

Mr. Hsu

Offered every other year

178 POLITICS AND HISTORY OF SOUTH AFRICA

The aim of the course is to acquaint students with the forces that have shaped the political system in South Africa today. The structure of the economy (mining, agriculture, and industry) is examined with particular attention paid to the role of black labor. The rise and consolidation of Afrikaner nationalism, the introduction and implementation of apartheid, the response of blacks to apartheid and to growing rural and urban poverty, and South Africa's foreign policy toward neighboring African countries are among the topics discussed. The economic and

political role played by American investment in South Africa is explored, as is official U.S. policy toward the country.

Ms. Grier

Offered every other year

179 THE HISTORY OF TRADITIONAL AFRICA/ Lecture, Discussion

An introduction to the history of Africa south of the Sahara. The course begins with the early civilizations of Kush, Axum, Ghana, Mali, Songhai, Benin, the Zanj, Congo, and Zimbabwe and continues through to the arrival of Europe. Attention is given to eastern, western, and southern Africa. The approach is largely historical and anthropological.

Mr. Ford

Offered every other year

180 HISTORY OF MODERN AFRICA/ Lecture, Discussion

Introduces students to the major themes of modern African history. Begins with an orientation to precolonial Africa and then considers four main periods: (1) the imperial years, (2) the struggle for independence, (3) the 1960s as a decade of independence, and (4) the 1970s as a search for identity and development. Focus is primarily on the years since 1945.

Mr. Ford

Offered every other year

182 POLITICS, PEOPLE, AND POLLUTION/ Lecture, Discussion

Environmental problems and issues arise from economic development processes in both the industrialized and developing countries. What are the facts and what are the myths in a consideration of environment and development? How do we establish policies for dealing with these problems? What are the processes by which governments make decisions addressing complex environmental/development issues here and in distant parts of the world? This course offers students an opportunity to examine the relations between environment and development in the context of developing and industrialized societies.

Ms. Thomas, Mr. Schwarz

Offered every other year

189 REMOTE SENSING OF THE ENVIRONMENT/ Lecture, Laboratory

Offers a broad introduction to one of the most powerful tools now being developed for surveying geographical phenomena. It covers the use of remotely-sensed data such as air photos and a variety of satellite imagery to provide answers to many of the problems about our physical and human environment.

Mr. Steward

Offered every year

190 SURVEY OF TWENTIETH-CENTURY GLOBAL HISTORY/ Lecture, Discussion

Starting with a brief assessment of the world in 1900, the course offers historical background to the contemporary global order. Designed to help students view their lives within a worldwide perspective in terms of politics, economics, and culture as well as the human costs and individual resilience shown during the great crises of this century. Students write several essays to integrate class reading, lectures, and discussions.

Mr. Ford, Mr. Astolfi

Offered every year

207 POLITICS AND DEVELOPMENT: KENYA AND EL SALVADOR

Examines the theoretical debates surrounding concepts such as development, modernization, underdevelopment, and dependency and looks in some detail at the politics of development in two countries: one in Central America and one in Africa. The roles of political parties, the bureaucracy, the military, the extremes

of wealth and poverty, and the impact of global economic and political forces on these countries are examined.

Ms. Grier

Offered every other year

210 ENVIRONMENTAL PROTECTION LAW/ Lecture, Discussion

A free-wheeling discussion of pollution control in the real world and its legal, institutional, and political framework: federal, state, and local laws and their scientific basis; agency practice and procedure; public litigation and private "citizens' suits"; selecting theories and remedies, both civil and criminal; tactics and strategies; citizen "watchdog" groups; corporate and media responsibility; economy versus ecology; old tools, new tools, and potential for change. The course includes reading in multilithed materials—statutes and journal articles. Informal student advocacy panels are utilized.

Staff

Offered every other year

211 GEOMORPHOLOGY OF HUMID TROPICS/ Lecture, Discussion

The humid tropics, home of the rainforests and savanna, are areas of special interest to physical geographers. Deep weathering of rocks, rapid soil erosion when the forest or grasses are removed, great rivers in the tropics, and the devastating impact of human intervention are among the topics explored.

Mr. Lewis

Offered every other year

212 WOMEN AND SOCIAL CHANGE/ Seminar

Examines the central assumptions and theories about the status and roles of women from multidisciplinary, cross-national, cross-cultural perspectives, emphasizing the Third World. Explores issues pertaining to the division of labor between the sexes, questions of class and gender, the household economy, women's roles in economic development, population, education, the internationalization of capital and women's work, women in peasant economies, and women in politics and political organizations. Materials focus on women's experience in Africa, Asia, the Middle East, and Latin America.

Ms. Thomas

Offered every other year

218 SEMINAR IN PHYSICAL ENVIRONMENT AND DEVELOPMENT/ Seminar, Discussion

The world is changing more rapidly than at any time in history. This course reviews the patterns of change in the Third World, examines the role of environment and resource management in development, and allows students to develop their own in-depth case studies. Permission of instructor is required.

Mr. Lewis

Offered every other year

220 ETHNOLOGY: ARMENIAN CULTURE AND SOCIETY/ Lecture

An intensive investigation of Armenian history, politics, culture, social institutions, and religion. Topics to be discussed include prehistory, the role of the Church, the dynasties, the Genocide, and Armenians throughout the Diaspora. Attention is given to important Armenian figures such as Saint Vartan, Saroyan, Issahakian, Zarian.

Mr. Hagopian-Gerber

Offered every year

222 STRATEGIES OF DEVELOPMENT AND CHANGE IN COMMUNIST POLITICAL SYSTEMS/ Lecture, Discussion

Examines the relationship among ideology, political power, and levels of economic development in the formulation of communist political systems. Poses the central question: How do communist political leaders attempt to achieve the

dual goals of development and socialist transformation? Offers a brief examination of the Soviet Union as a prototype of a communist political system. How successfully did the Soviet Union promote the transition to socialism? For answers, this course looks at subsequent revolutions in Eastern Europe, China, and Cuba to determine their adherence to, or rejection of, the Soviet model. What alternative strategies have evolved? Examines sources of change and limits to change in communist political systems.

Ms. Sochor

Offered every other year

225 BLACK POLITICS IN THE UNITED STATES/ Lecture

Analyzes the distribution of power as it affects the black community. Among those topics to be explored are: black congressmen and lobbies, black politics in cities, the impact of blacks on the bureaucracy, and a comparison of Northern and Southern black politics.

Ms. Enloe, Ms. Grier

Offered every third year

228 ECONOMIC DEVELOPMENT/ Lecture

Examines the major theories of economic development, the major problems confronting the less developed countries, and the policies and strategies appropriate for economic development. Topics include agricultural development, income distribution, industrialization strategies, foreign aid and investment, population, labor, and employment.

Mr. Hsu

Offered every other year

229 MANAGEMENT OF ARID LAND

The drylands of the world present special development problems. Peculiarly prone to degradation, these regions face the difficult task of providing support for a rapidly growing population. Viewed in a historical perspective, the demography, social and livelihood systems, behavioral characteristics, and physical constraints of dryland ecosystems are analyzed. Special attention is paid to evaluating the management strategies currently employed in the use of drylands, identifying the obstacles constraining their growth, and assessing their future development potential.

Mr. Johnson

234 LATIN AMERICA: PROSPECTS AND PROBLEMS/ Lecture, Discussion

Deals with the politics, history, culture, ethnology, and economic prospects of Latin America. Increasingly, Latin America has been given attention by the American and international press and by the American executive and legislative branches of government. This course aims to provide needed information so that the student and the informed citizen will be able to evaluate the promises, the claims, and the counter claims presented by various sides concerning Latin America.

Staff

Offered every other year

236 INTERNATIONAL WATER POLICY/ Lecture, Seminar

Deals with the law and management of (1) national water resources (from the perspective of several nations including the U.S.), (2) international river systems and groundwater basins, and (3) oceans and seas. Within the context of each of the three topical areas, the course defines the "water problem(s)" with which policy and administrative managements must deal; analyzes existing programs in terms of their ability to respond to the "water problem(s)," and considers conceptual guidelines for improving policy and institutions.

Ms. Emel

Offered every other year

249 INTERNATIONAL POLITICAL ECONOMY

Refer to course description under Government 249.

Mr. Rosh

251 PROBLEMS IN ENVIRONMENTAL MANAGEMENT/ Lecture, Discussion

An examination of current approaches and methods in environmental management, with emphasis upon theories and skills needed for applied work in the field. An advanced undergraduate seminar intended particularly for geography seniors to provide an integration of skills and concepts in environmental geography through the examination of concrete management problems. Topics include history of environmental geography, environmental data bases, environmental and social impact assessment, writing research proposals, and decision-making aids.

Staff

Offered every year

256 PROBLEMS IN WATER RESOURCES PLANNING/ Problems course

Water resources planning techniques and water resources engineering, economic, social, and environmental topics are reviewed and applied in a realistic planning exercise. Students working in groups prepare, for a selected region or river basin, a preliminary planning document that could be used as a guide for future detailed planning. Emphasis is on the preparation and the written and oral presentation of the planning document in a professional manner that would be acceptable in the real world. Prerequisite: a 200-level course in environmental assessment; physical geography; economics; environment, technology, and society; or permission of instructor.

Mr. Schwarz

Offered every other year

257 THEORY OF MULTI-OBJECTIVE RESOURCE EVALUATION/ Lecture

Introduction to the theory of multi-objective resource evaluation. Presents the full range of criteria required for the economic, social, and environmental evaluation of resource programs and projects, together with selected applications.

Staff

Offered every year

258 SOUTH AFRICA AND DEVELOPMENT IN SOUTHERN AFRICA/ Seminar

Examines problems of development in the southern Africa region with particular reference to the SADCC countries and the impact of South Africa on political and socio-economic change.

Ms. Seidman

Offered periodically

266 ETHNOLOGY AND DEVELOPMENT IN THE CARIBBEAN/ Lecture

Focuses upon various problems in the analysis of socioeconomic change in the Caribbean culture area, offering an extensive and intensive view of the politics, ethnology, problems, and prospects of development in the Caribbean and Central America.

Mr. Hagopian-Gerber

Offered every other year

267 POLITICAL ANTHROPOLOGY/ Lecture, Discussion

Examines varying levels of sociopolitical culture. Cultures viewed include hunters and gatherers, contemporary Russian, and selected African societies. A certain amount of attention is given to Caribbean political systems and movements.

Mr. Hagopian-Gerber

Offered every year

268 ECONOMIC ANTHROPOLOGY/ Lecture, Discussion

A comparative study of tribal and state economic organizations, focusing on the ways in which production, distribution, and consumption are institutionalized cross-culturally. Topics to be considered include the nature of work, the idea of surplus, modes of exchange and distribution, social structure, and political structure.

Staff

Offered every other year

269 ENVIRONMENT AND DEVELOPMENT IN AFRICA/ Lecture, Discussion

Efforts to promote economic growth in sub-Saharan Africa have resulted in mixed outcomes. Few successful development projects exist, and the difficulties posed by environmental constraints and human impacts on environment remain considerable. The complex relationship between nature, society, and technology in the use of Africa's resources is the focus of the course.

Mr. Johnson

Offered every other year

271 FIELD METHODS: CONCEPTS AND ISSUES IN ANTHROPOLOGY/ Seminar

Deals with theoretical and practical issues in the conduct of anthropological field work, including an intensive survey of the literature and instruction in use of tape recording and camera equipment involved in field work. It includes on-site experience, where students obtain and conduct a limited field research project.

Mr. Hagopian-Gerber

Offered every other year

276 CULTURAL ECOLOGY IN THE HUMID TROPICS/ Lecture, Seminar

A mystique exists about the humid tropics. Midlatitude biases have led to inaccurate assessments of the composition of these wet, hot lands; of traditional uses of them; and of their suitability, both past and present, to support large populations and high living standards. These issues are examined by focusing on the range of environments and livelihood strategies that have existed or could exist in this region.

Mr. Turner

Offered periodically

278 DEVELOPMENT AND APPLIED ANTHROPOLOGY/ Seminar

Anthropology, because of its emphasis on a holistic approach to culture, coupled with participant-observation field experience, is uniquely suited to the analysis and direction of cultural change. The purpose of this course is to develop an anthropological perspective with respect to problems of direction, cultural change, intervention, and "modernization." Areas to be discussed include problems of "applied" theory, unintended consequences of institutional change, and psychological and cultural impediments to modernization. Critical attention is paid to the ethnocentrism of "development" and modernization.

Mr. Hagopian-Gerber

Offered every year

281 URBANIZATION AND MIGRATION IN AFRICA/ Lecture, Discussion

Considers historical dimensions of African urbanization with special attention to the spatial and functional role of cities. Agricultural, administrative, political, market, and industrial uses are examined, as are the impact of urbanization on African cultural values.

Mr. Ford

Offered every other year

283 SUPERPOWERS AND THE THIRD WORLD/ Seminar

Considers the goals and policies of the Superpowers toward the Third World and examines specific case studies of instances when these goals and policies were carried out, amended, or challenged. Some of the underlying questions posed in this course include the following: What are the Superpowers' expectations of, and sources of influence on, the Third World? To what degree are North-South issues affected by East-West considerations? How are local problems exacerbated by Superpower intervention? What foreign policy options do Third World countries have? What are the long-range prospects for the international system as a whole?

Ms. Sochor

Offered every year

284 LANDSCAPES OF THE MIDDLE EAST/ Lecture, Seminar

A diverse array of landscapes, economies, and cultures comprise the Middle Eastern culture realm. The modernization and transformation of the traditional Islamic and non-Islamic patterns of life and livelihood in the Middle Eastern cultural mosaic are the focus of this course. Literature and ethnographic description supplement geographic analyses.

Mr. Johnson

Offered every other year

286 AGRICULTURE IN TRADITIONAL ECONOMIES/ Lecture

Subsistence, transitional, and smallholder agriculturalists are the focus of investigation. Emphasis is placed on the economic behavior and livelihood strategies employed in these economies and on the theories of their change. Discussion paper.

Mr. Turner

Offered every other year

287 POLITICS, POWER, AND PARTICIPATION: COMMUNITY ACTION IN THE THIRD WORLD/ Seminar

Focuses on issues of local-level participation in Third World countries. Investigates traditional forms of organization such as caste associations in India and more recent forms such as cooperatives in Kenya, Cuba, or Tunisia. Examines specific groups—the landless and near-landless, the urban poor, women, particularly ethnic, religious, clan, or caste groups—in regard to who participates and “who gets left out.” Patron-client relations, political parties, self-help associations, and peasant mass movements are analyzed for their roles in the process of socio-economic and political change.

Ms. Thomas

Offered every other year

288 DISEASE AND HEALTH SERVICES IN THE THIRD WORLD/ Seminar

Examines the epidemiology and geographical distribution of several diseases including: malaria, cholera, schistosomiasis, trypanosomiasis, and malnutrition. The relationship of disease extension to environmental changes that are secondary to development activities also is examined, as are some of the different programmatic efforts that have been developed to control these disease problems.

Staff

Offered periodically

289 POLITICAL ECONOMY OF DEVELOPMENT/ Seminar

Examines the current state-of-the-art and debates surrounding differing theories of underdevelopment and their implications for international and regional development.

Staff

Offered every other year

290 DEVELOPMENT PROJECT MANAGEMENT/ Seminar

Explores relationships between development theory and project implementation. Topics include project design, implementation, management, budget monitoring, scheduling, and evaluation. Students develop one simulated project from beginning to conclusion as the major written assignment.

Mr. Ford

Offered every year

291 OXFAM STUDY TOUR

Offers an opportunity for students to gain credit for an intensive two- or three-week field study, organized by Oxfam-America, a Boston-based development agency, in one or more developing countries. Students join the field tour (at Oxfam-America specified fees) and write a research paper analyzing a development issue or problem.

Staff

Offered every year

299.1 READINGS IN INTERNATIONAL DEVELOPMENT/ Discussion

Variable credit and topics relevant to issues of international development.

Staff

Offered every year

299.2 RESEARCH IN INTERNATIONAL DEVELOPMENT

Variable credit, differing topics, may be associated with international development research projects.

Staff

Offered every year

302 THESIS RESEARCH

Master's degree candidates may register for thesis research while working on research for their master's degree thesis.

Staff

Offered every year

310 RESEARCH SEMINAR IN DEVELOPMENT GEOGRAPHY

Designed for thesis and dissertation level students working in the areas of resources, development, and environmental cognition, who are developing proposals or preproposal research papers. The seminar provides a forum for discussion, criticism, and practical advice. Seminar paper.

Staff

Offered periodically

314 RESEARCH DESIGN AND METHODS/ Seminar

Covers all the major topics in research design and methodology: e.g., problem definition, research strategies, measurement, sampling, and data collection techniques and procedures.

Ms. Hanson

Offered every year

330 SEMINAR IN CULTURAL ECOLOGY

The "ecological transition," the increasing incorporation of nature into human culture, is the point of departure for an examination of the theory, method, and policy relevance of cultural ecology. Prerequisite: Geography 177 or equivalent.

Mr. Johnson, Mr. Turner

Offered every other year

336 HOUSEHOLD ECONOMIC BEHAVIOR AND THE GEOGRAPHY OF DEVELOPMENT/ Graduate Seminar, Lecture, Discussion

Explores the nature and role of the household as a socioeconomic organization and primary decision-making unit in developing countries. Key issues relate to semi-subsistence farm households, migration, urban-rural linkages, gender and age divisions of labor, women farmers, and cash crop versus food crop. Decision-

making theory and the economics of household production are studied as a basis for household-level research on resource management.

Ms. Berry

Offered periodically

351 RESOURCE GEOGRAPHY: THEORY AND METHOD/ Seminar

Examination of major theories and methods of resource estimation, allocation, and management. Provides coverage of the scholarly literature of the field.

Mr. Kasperson, Ms. Emel

Offered every other year

358 PROFESSIONAL SEMINAR IN RESOURCE PROJECT EVALUATION

Covers best-practice applied methods of resource project evaluation as suggested by current research, the procedures of the World Bank, and leading U.S. resource agencies. The intent of the seminar is to bring advanced students to a level of preparation adequate for professional work in resource project evaluation.

Staff

Offered every year

360 DEVELOPMENT THEORIES AND PHILOSOPHIES OF CHANGE/ Seminar

A graduate seminar that examines development theory relating theory, issues, and practice with an emphasis on the evolution of ideas and the search for alternative approaches to development interventions.

Ms. Berry

Offered every year

370 ANIMAL AGRICULTURE/ Lecture, Discussion, Seminar

Animals and humans have a long history of close association. First as hunters and then as domesticators, humans have relied on animals for food, fiber, labor, and companionship. The ecology of many diseases also links people to the animals that they exploit. Today animals play an increasingly important role in efforts to increase food production and to improve diet quality in support of a growing human population. Both terrestrial and aquatic animal systems, and the theory and practice of their intensified exploitation, are examined in this seminar.

Mr. Johnson

Offered every other year

395 ECONOMIC DEVELOPMENT AND POLICY ANALYSIS/ Seminar

Examines various approaches and strategies for economic development emphasizing their implications for institutional change and patterns of resource allocation through case studies of selected countries. The impact of various policy choices on industry, agriculture, domestic and international trade, finance, and labor use are analyzed.

Ms. Seidman

Offered periodically

396 INSTITUTIONAL CHANGE FOR DEVELOPMENT FINANCE/ Seminar

Explores the structure of institutions in developing countries for finance and the issues surrounding the transformation of these institutions for development purposes.

Ms. Seidman

Offered periodically

For additional courses related to International Development, refer to the following History Department listings:

020 AMERICA AND THE WORLD

Refer to course description under History.

Mr. Billias, Mr. Little

177 LATIN AMERICAN HISTORY

Refer to course description under History.

Mr. Little

179 THE HISTORY OF TRADITIONAL AFRICA

Refer to course description under History.

Mr. Ford

180 HISTORY OF MODERN AFRICA

Refer to course description under History.

Mr. Ford

181 TRADITIONAL CHINA

Refer to course description under History.

Mr. Ropp

182 MODERN CHINA

Refer to course description under History.

Mr. Ropp

184 MODERN JAPAN

Refer to course description under History.

Mr. Ropp

281 THE PEOPLE'S REPUBLIC OF CHINA

Refer to course description under History.

Mr. Ropp

282 CHINESE WOMEN IN LITERATURE AND SOCIETY

Refer to course description under History.

Mr. Ropp

283 CLIMATE AND HISTORY: ANALYSIS OF THE INFLUENCE OF CLIMATE ON HISTORICAL CHANGE

Refer to course description under History.

Mr. Ford

286 CITIES IN AFRICA

Refer to course description under History.

Mr. Ford

291 SEMINAR IN ADVANCED TOPICS IN INTERNATIONAL RELATIONS

Refer to course description under History.

Mr. Little

International Relations

PARTICIPATING FACULTY

Douglas Little, Ph.D., *program director*, Associate Professor of History

Daniel R. Borg, Ph.D., Associate Professor of History

Paul Lucas, Ph.D., Associate Professor of History

Zena Sochor, Ph.D., Associate Professor of Government

Roger Van Tassel, Ph.D., Professor of Economics

Theodore H. Von Laue, Ph.D., Jacob and Frances Hiatt Professor of European History

Robert Hsu, Ph.D., Associate Professor of Economics

Robert Ross, Ph.D., Associate Professor of Sociology

INTERNATIONAL RELATIONS CONCENTRATION

Clark's International Relations Program constitutes neither a department nor a major but rather a concentration or a subfield within two existing majors, history and government. Recent developments in world affairs have broken down the old disciplinary boundaries between diplomatic history and international relations, making an interdisciplinary approach essential. The international relations core curriculum consists of a series of seven interrelated courses, designed to provide an integrated framework for understanding international affairs from historical, political, and economic perspectives.

Requirements

A. A student wishing to pursue a history concentration or a government subfield in international relations must take a *core cluster* consisting of the following three courses:

1. Government 169 *Introduction to International Relations*
2. History 238 *U.S. Foreign Relations Since 1914*
3. Economics 108 *International Financial Developments*

B. In addition, international relations students must choose *one of the following two analytical clusters*—world economics or comparative diplomacy—consisting of three courses:

World Economics

1. Government 249 *International Political Economy*
2. History 125 *Development Problems*
3. Sociology 257 *Cities in Global Perspective*

Comparative Diplomacy

1. Government 179 *Comparative Foreign Policy*
2. History 90 *Twentieth Century Global History*
3. Economics 176 *Comparative Economic Systems*

C. Finally, international relations students must take a *capstone seminar* related to their analytical cluster. Examples of suitable capstone seminars include Government 283, *Superpowers in the Third World*, History 285, *Proseminar on the Multinational Corporation*, and Government 289/History 291, *Advanced Topics in International Relations*.

D. International relations students should bear in mind that they must fulfill the other existing requirements for their respective majors. International relations students should also note that Economics 10 is a prerequisite for all 100-level economics courses.

Italian

See Department of Foreign Languages and Literatures.

Judaic Studies

PARTICIPATING FACULTY

Moshe Waldoks, Ph.D., *acting director*: modern Jewish history and thought, Eastern European Jewish history, Jewish mysticism, Jewish humor
Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, classical mythology, classical art and archaeology, ancient history
Judith Nave, M.A.: Hebrew language and literature

COURSES

The following courses in Judaic studies are offered in the Departments of History and Foreign Languages and Literatures. For course descriptions check the course listings under those departments. For further information concerning the Judaic Studies Program, to discuss the possibility of integrating Judaic studies courses within various departmental majors, or to develop a concentration or self-designed major in Judaica, contact Mr. Waldoks.

HEBREW LANGUAGE AND LITERATURE COURSES

(See Department of Foreign Languages and Literatures.)

101-102 ELEMENTARY HEBREW

Refer to course description under Hebrew.

Ms. Nave

103 INTERMEDIATE HEBREW

Refer to course description under Hebrew.

Ms. Nave

104 INTERMEDIATE/ADVANCED HEBREW

Refer to course description under Hebrew.

Mr. Waldoks

HEBREW LITERATURE/JUDAIC STUDIES COURSES CONDUCTED IN ENGLISH

119 INTRODUCTION TO THE HEBREW BIBLE

Refer to course description under Hebrew.

Staff

123 THE RABBINIC LITERARY TRADITION

Refer to course description under Hebrew.

Staff

124 THE JEWISH LEGAL TRADITION

Refer to course description under Hebrew.

Staff

140 HISTORY OF JEWISH MYSTICISM

Refer to course description under Hebrew.

Mr. Waldoks

160 MODERN ISRAELI LITERATURE

Refer to course description under Hebrew.

Staff

185 MODERN JEWISH LITERATURE

Refer to course description under Hebrew.

Mr. Waldoks

HISTORY

174 THE JEWISH EXPERIENCE

Refer to course description under History.

Staff

223 THE AMERICAN JEWISH EXPERIENCE: A HISTORY OF JEWS IN THE UNITED STATES

Refer to course description under History.

Mr. Waldoks

273 WOMEN IN ANTIQUITY

Refer to course description under History.

Staff

274 RABBIS, ROMANS AND RUINS

Refer to course description under History.

Staff

276 OUT OF THE GHETTO: MODERN JEWISH HISTORY AND THOUGHT

Refer to course description under History.

Mr. Waldoks

277 HISTORY OF ZIONISM AND THE RISE OF ISRAEL

Refer to course description under History.

Mr. Waldoks

278 HOLOCAUST: THE DESTRUCTION OF EUROPEAN JEWRY (1933-1945)

Refer to course description under History.

Mr. Waldoks

CLASSICS

262 JEWS AND CHRISTIANS IN THE ANCIENT WORLD

Refer to course description under Classics.

Mr. Burke

273 WOMEN IN ANTIQUITY

Refer to course description under History.

Staff

274 RABBIS, ROMANS AND RUINS

Refer to course description under History.

Staff

Management

GRADUATE SCHOOL OF MANAGEMENT FACULTY

Mark S. Plovnick, Ph.D., *associate dean*: organizational development, team development, health care management, union-management relations

Richard J. Bartkowski, Ph.D.: managerial accounting, planning and control, behavioral implications of accounting systems

Alfred S. Boote, Ph.D.: marketing research, marketing strategy, consumer behavior

Robert C. Bradbury, Ph.D.: health systems planning, health promotion, cost containment

Robert M. Brown, Ph.D.: statistical decision making, operations management, production planning and inventory control

Kent Carter, Ph.D.: strategic management control systems, top executive decision making

Gary N. Chaison, Ph.D.: union structure, government growth and collective bargaining, personnel administration

Jon A. Chilingirian, M.P.A., Ph.D.: health administration, financial control systems

Peter P. Gil, Ph.D.: unemployment and job dilution caused by technological change, education for management in the private and public sectors, responsible management of societal resources

Joseph H. Golec, Ph.D.: finance, industrial organization, money and banking

Jessica R. Jenner, Ph.D.: career development, stress management, behavior in groups and organizations

Nancy E. Lambert, Ph.D.: direct marketing, services marketing, organizational buying behavior

Thomas W. Landers, M.B.A., C.P.A.: taxes, auditing, financial planning, MIS

Harold T. Moody, Ph.D.: marketing research, marketing in service organizations

Edward J. Ottensmeyer, Ph.D.: strategic issue management, strategic management of technology and innovations

Charles P. Robinson, M.B.A., Ph.D.: optimization, mathematic programming, operations research

Maury Tamarkin, Ph.D.: future markets, corporate finance, diversification

ADJUNCT FACULTY

Marque Bagshaw, Ph.D.

Judith Budz, Ph.D.

William P. Densmore, B.S.M.E.

Richard D. Fiorentino, M.B.A.

Donald E. Fries, M.B.A., J.D.

Alice Livdahl, J.D.

Jim Young, M.S., M.B.A.

AFFILIATE FACULTY

Carolyn E. Cotsonas, J.D.

N. Lynn Eckhert, M.D., Dr. P.H.

Arthur Gerstenfeld, M.S., Ph.D.

Gale L. Kelly, Ph.D.

Alan M. Stoll, M.P.A.

Keith J. Waterbrook, M.H.A.

John T. O'Connor, Ph.D.

UNDERGRADUATE PROGRAMS IN MANAGEMENT

The Graduate School of Management offers two programs to undergraduates: the undergraduate major and the Five-Year B.A./M.B.A. Program. The program descriptions follow. Students with additional questions should contact the coordinator of undergraduate programs in management. Students with questions concerning the M.B.A. Program should refer to the Clark University M.B.A. catalogue.

FIVE-YEAR B.A./M.B.A. PROGRAM

The Graduate School of Management offers undergraduate students the option of participating in a five-year program while at Clark. In this program they may earn a B.A. in their major, as well as the M.B.A. degree. The major features of the program are:

- 1) an undergraduate major in any of the liberal arts disciplines at the University. Business/management is not acceptable as a major for this program;
- 2) graduate courses, beginning in the senior year, which lead to the M.B.A. degree and help prepare students for management positions in business, government, and nonprofit organizations.

The five-year program is designed to meet several needs expressed by students today. It provides a well rounded education by combining an undergraduate liberal arts education with a master's degree in business administration, and the total time for getting a liberal arts bachelor's degree and an M.B.A. is reduced to five years.

The program is designed to provide education that will give both preparation for immediate employment and potential for growth toward important positions in organizations. Ultimately, the program bridges the gap between liberal arts education and practical applied learning.

The Program

Briefly, the Five-Year B.A./M.B.A. Program involves five sets of learning experiences:

- 1) undergraduate management courses in the freshman, sophomore, and junior years
- 2) related courses in other departments in economics, statistics, computer programming, and mathematics, which contain the tools needed for the graduate courses in management
- 3) internship or work experience(s) in management situations to help prepare for graduate coursework
- 4) graduate management courses taken in the senior year
- 5) completion of the graduate M.B.A. program during the fifth year

Advising of Students and Entrance into the Program

Students must plan their courses carefully during their undergraduate years in order to complete the requirements both for their major and for the M.B.A. program in the time provided. The program's undergraduate adviser is available to help and advise any students interested in the Five-Year B.A./M.B.A. Program.

Entrance into the program occurs after the sophomore year, but before the beginning of the senior year. Interested students submit an application to the Graduate School of Management for participation in the Five-Year Program. As part of the application process, students are required to submit transcripts of their freshman and sophomore years' work and are required to take the Graduate Management Admission Test (GMAT). Application approvals are conditional upon the successful completion of the B.A. degree.

Applicants should have completed all undergraduate prerequisite courses, except for Management 203, prior to applying to the program.

Work Experience

During the senior year, B.A./M.B.A. students take courses with regular M.B.A. students who have typically been working for several years. In order to develop some of this work world experience, the program expects the B.A./M.B.A. students to participate in internships, summer jobs, or other experiences that can provide exposure to management issues and dynamics. This exposure can be highly useful both in taking full advantage of the M.B.A. courses and in enhancing students' credentials and qualifications for job placement upon graduation from the M.B.A. Program.

Program Requirements

- 1) Two undergraduate courses in management—201 and 203
- 2) Five related courses—Economics 10, 11, 160, Math 11 and Computer Science 101
- 3) Fourteen M.B.A. courses—four as a senior, ten as a graduate including electives.

Sample Schedule

An example of a schedule an economics major could pursue:

<i>Year</i>	<i>Fall Semester</i>	<i>Spring Semester</i>
Freshman	Computer Science 101 Economics 10 Elective Elective	Mathematics 11 Economics 11 Elective Elective
Sophomore	Management 201 Economics 205.1 Elective Computer Science 102	Economics 205.2 Economics 160 Mathematics 120 Elective
Junior	Management 203 Elective Elective Economics elective	Elective Elective Elective Elective
Senior	MBA 310 MBA 340 Economics elective Elective	MBA 330 MBA 350 Elective Economics elective
Fifth year	MBA 337 MBA 341 MBA 362 MBA 366 MBA 378	MBA 342 MBA 345 MBA 360 MBA 376 MBA 390

UNDERGRADUATE MAJOR IN BUSINESS/MANAGEMENT

Students interested in a career in management immediately after graduation, whether in a profit or nonprofit organization (business, government, education, health care delivery, religious institution), should consider business/management as an undergraduate major. The major offers students the opportunity to develop skills useful for a career within the framework of a liberal arts education.

Skills useful for a career or for additional training are developed at the same time as the student acquires the educational breadth and depth essential for personal

and professional growth. The major draws upon a variety of disciplines, providing a program that is both practical and broadly educational. Required and optional courses are drawn from the offerings of a number of academic departments. Enrollment in the business/management major is limited and is based on performance in the freshman and sophomore year courses. Students apply for admission to the major at the end of their sophomore year.

Within the general requirements of the program, and consistent with the concept of the extended major, students may wish to concentrate their interests in particular offerings that relate to aspects of management meeting their needs and interests. For example, computer science, mathematics, statistics, and accounting electives provide a basis for a career in the data processing, planning, and related specialties; psychology, sociology, philosophy, and government stress human behavior in a social context; courses in environment, technology and society or in international development further an awareness of issues and skills useful in managing public and private responses to important issues; language and literature courses help develop oral and written communication skills essential in virtually all aspects of management.

Although students may extend their interests in any of the above directions, it should be noted that the general thrust or bias of the program is a humanistic one. This emphasis stems from the following considerations:

- a) the University's desire to place the program well within the liberal arts framework;
- b) a commitment to the idea that management, after all, means getting things done through people.

Business/management at Clark offers students a vocational emphasis providing the necessary prerequisites for a job placement with a bachelor's degree. Students interested in graduate study towards an M.B.A. degree are encouraged to major in an area other than business/management and to consider the Five-Year B.A./M.B.A. Program.

A student's required courses for completion of the management major are those that were in effect at the time he/she was accepted into the Management Program (between the sophomore and junior years). For a current listing of requirements, contact the Graduate School of Management.

Required course for all majors: (Note: These courses should be taken approximately in the order listed.)

FRESHMAN AND SOPHOMORE LEVEL

Mathematics 11, *Introduction to Mathematics*, or successful completion of the math placement exam

Economics 10, *Issues and Perspectives*

Economics 11, *Principles of Economics*

Management 204 or Computer Science 101, *Introduction to Computer Programming*

Management 201, *Principles of Accounting*

Management 202 or Economics 160, *Introduction to Statistical Analysis*

JUNIOR LEVEL

Management 203, *Managerial Accounting*

Management 210, *Management and Behavioral Principles*

Management 230, *Marketing Management*

Management 240, *Corporate Finance*

Management 250, *Operations Management*

Management 262 or Philosophy 133, *Business Ethics*

SENIOR LEVEL

Management 260, *Business Policy*
Management 278, *Business Law*

Track requirements for all majors: Students must, by the first semester of their junior year, declare themselves as pursuing tracks A, B, C, or D within the major. Four courses from a track are required for completion of the major. Two of these must be 200-level management courses. The tracks are: Economics and Finance, Public Sector Management, Human Resource Management, Quantitative Analyses for Management. With permission from the program coordinator, students may design their own tracks.

A. Economics and Finance

Management 242, *Investments*, and Management 244,
Federal Tax Accounting, plus two of the following:

1. Economics 113, *Monetary Economics: Theory and Policy*
2. Any 200-level economics courses

B. Public Sector Management

Management 225, *Human Resource Management*, and
Management 226, *Industrial Relations* and two of the following:

1. Government 109, *Introduction to Public Policy and Administration*
2. Economics 126, *Public Policy Toward Business*
3. Economics 215, *Public Expenditures*
4. Sociology 246, *Social Planning and Social Policy*
5. MPA 320, *Policy Analysis**
6. MPA 330, *Public Budgeting**
7. MPA 350, *Public Administration in the American Democracy**
8. MPA 393, *Issues and Cases in Public Administration*

*available only to seniors, with permission.

C. HUMAN RESOURCE MANAGEMENT

Management 225, *Human Resource Management* and
Management 226, *Industrial Relations*; plus two of the following:

1. Psychology 170 or Psychology 172, *Introduction to Social Psychology* or *Psychology of Personality*. (Both cannot be taken for the track.)
2. Psychology 201 or Psychology 206, *Laboratory in Social Psychology* or *Laboratory in Personality*. (Both cannot be taken for the track.)
3. Sociology 282, *Industrial Sociology*
4. Sociology 291, *Small Group and Interpersonal Processes*
5. Psychology 221, *Research in Social Psychology*
6. Psychology 244, *Seminar in Motivation*
7. Management 212, *Industrial Psychology*

D. Quantitative Analyses for Management

Management 251, *Operations Research*, or
Math 119, *Applied Linear Algebra*, and one other 200-level management selection,
plus two of the following:

1. Any computer courses beyond CS 101.
2. Math 164, *Mathematical Models*
3. Math 147, *Statistical Methods for Computer Science*
4. Economics 265, *Basic Econometric Theory*

COURSES

201 PRINCIPLES OF ACCOUNTING/ Lecture, Discussion

Elements of generally accepted accounting procedures are presented for several major types of institutions, such as business, government, educational, and health.

Staff

Offered every year

202 INTRODUCTION TO STATISTICAL ANALYSIS/ Lecture, Discussion

Examines basic concepts and techniques of statistical methods; descriptive statistics, permutation and combination, an introduction to probability theory, sampling distribution, standardized normal distribution and other related distributions, simple and multiple regression, simple forecasting, and statistical decision-making.

Staff

Offered every year

203 MANAGERIAL ACCOUNTING/ Lecture, Discussion

This advanced course emphasizes accounting from the management perspective. Students learn principles of managerial decision making when using accounting information. Prerequisite: Management 201.

Staff

Offered every year

204 INTRODUCTION TO COMPUTER PROGRAMMING/ Lecture, Discussion

An introductory programming course emphasizing use of the computer and either BASIC or Pascal programming language as a tool for problem-solving in management. Students develop a working knowledge of character representation and manipulation, number representation and arithmetic, subroutines and functions, arrays and indexing, and, most of all, structured programming techniques and algorithms that make programming easier.

Staff

Offered every year

210 MANAGEMENT AND BEHAVIORAL PRINCIPLES/ Lecture, Discussion

Concerns general principles of management, with a special emphasis on the behavior of people in an organizational context. Topics include principles of organization, decision making, leadership, motivation and rewards, job satisfaction, and appraising employee performance.

Staff

Offered every year

212 INDUSTRIAL PSYCHOLOGY/ Lecture, Discussion

A survey of major topics in the area of industrial/organizational psychology including, but not limited to: selection and placement, appraisal, motivation, productivity and job satisfaction, tests and measurement, group dynamics, and organization development and change.

Staff

Offered every year

225 HUMAN RESOURCE MANAGEMENT/ Lecture, Discussion

Covers the general areas of human resource management, to include job design, recruitment, management development, performance appraisal, counseling, labor relations and collective bargaining, wages and fringe benefits, EEO, OSHA requirements, manpower planning, and women in management.

Staff

Offered every year

226 INDUSTRIAL RELATIONS/ Lecture, Discussion

An introduction to the concepts, theory, and practice of labor-management relations. Topics covered include: the development of the trade union movement;

the structure, practices, and outcomes of collective bargaining; the administration of the collective agreement; disputes resolution procedures; and the evolving public policy of labor relations.

Staff

Offered every year

230 MARKETING MANAGEMENT/ Lecture, Discussion

Surveys the role of marketing in business and society, focusing on specific marketing activities. Topics include the marketing environment, marketing research and information systems, consumer behavior, the organizational consumer, products, pricing, distribution, promotion, international service, and nonprofit marketing. Prerequisites: Economics 10, 11 and Management 201 and 202.

Staff

Offered every year

231 MARKETING RESEARCH/ Lecture, Discussion

Marketing research focuses on consumer behavior and retail advertising. Topics include: primary and secondary data collection; questionnaires for attitude and awareness surveys, mail and phone surveys, personal interviews, focus groups, and data analysis techniques. Prerequisite: Management 230.

Staff

Offered every year

240 CORPORATE FINANCE/ Lecture, Discussion

A comprehensive study of financial decision-making from the perspective of the internal financial manager. Topics covered include valuation, loss of capital, capital structure, capital budgeting and financial analysis. Prerequisites: Economics 10, 11 and Management 201 and 202.

Staff

Offered every year

242 INVESTMENTS/ Lecture, Discussion

Covers investment principles, market behavior, and investment strategy. Investment principles include: portfolio selection, fundamental analysis, portfolio theory; debt instruments and money markets; the stock option market; and alternative investments. Prerequisite: Management 240.

Staff

Offered every year

250 OPERATIONS MANAGEMENT/ Lecture, Discussion

Surveys techniques in the area of model building and operations research. Emphasis is on topics oriented toward business forecasting as well as rational decision making by managers. Topics include forecasting, inventory control, system reliability, waiting-line theory, and assembly-line balancing. Prerequisite: Economics 10, 11, 160, Management 201, Computer Science 101, and Math 11.

Staff

Offered every year

251 OPERATIONS RESEARCH/ Lecture, Discussion

Linear models, linear programming, the simplex method, sensitivity analysis, network analysis, and dynamic programming.

Staff

Offered every year

260 BUSINESS POLICY/ Lecture, Discussion

This capstone type course should be taken during the senior year. It focuses on those general management skills involved in choosing the strategy (or goals and purposes) of an organization and in committing critical resources to the organization's goals. The course integrates the major management functions, viewing the organization not only as an organic entity comprising a system in

itself, but also affecting and affected by its environment. The method of instruction is case study. Prerequisites: Management 210, 230, 240 and 250.

Staff Offered every year

262 BUSINESS ETHICS/ Lecture, Discussion

The social, political, technological, and ethical issues confronting the modern corporation make it necessary for the contemporary manager to develop a specific knowledge base and decision-making style in order to deal with complex situations. The course examines the relationship between organizations and the various environments in which they operate. Political, social, economic, and legal issues are considered, and the role of values and ethics in evaluating these environmental forces are analyzed.

Staff Offered every year

278 BUSINESS LAW/ Lecture, Discussion

Examines the legal framework within which American business operates. It is concerned with the various laws that determine the rights and obligations of persons taking part in business transactions. Emphasis is on those areas of the law commonly encountered by the business manager, such as contract negotiation and provisions, the Uniform Commercial Code, government regulations, consumer protection, and tort liability. The goal is to provide students with a basis and understanding of the business and legal environment which will guide future management decisions and inquiry. There are assigned textual readings and class discussion of cases selected to illustrate these topics.

Staff Offered every year

199 INTERNSHIP

Offered for variable credit.

THE GRADUATE M.B.A. PROGRAM

The M.B.A. Program has several unique features that should be evaluated by prospective students in light of their interests and preferences. The M.B.A. Program is not solely committed to the study of business organizations. The faculty believes the study of management applies to all organizations, nonprofit as well as profit. Consequently, the theoretical core of each field of study is emphasized, and descriptive institutional material is used to particularize the core. The mix of students in the program, including current and future managers of educational, health, religious, government, and business organizations, forces the faculty to focus on the universal principles of managing. Graduate courses and seminars are scheduled during the day and in the late afternoons and evenings. These hours do not mean there is an evening program for part-time students, with a separate program in the daytime for full-time students. It is one program, with both part and full-time students attending the same courses, seminars, and special projects. This aspect of the program contributes a unique atmosphere in which students learn from each other's wealth of different practical and academic experience.

The M.B.A. Program requires eighteen graduate credits for the degree, equivalent to four semesters of full-time graduate study. The eighteen credits are organized into four categories of course work and independent study (courses meet for fourteen weeks, three hours a week, unless otherwise indicated):

- 1) *Required Background Courses*—These courses are designed to introduce students to the fundamental language, concepts, and skills underlying the traditional or core functional fields of management. Students with previous course work or experience in these areas may elect to waive these courses by taking and passing waiver exams.

MBA 301, *Managerial Accounting and Finance*

MBA 302, *Quantitative Methods*

MBA 303, *Managerial Economics*

MBA 304, *Introduction to Management Information Systems*

- 2) *Required Core Management Courses*—These courses are intended to provide students with knowledge and skills in several important areas in Management.

MBA 310, *Organization Behavior*

MBA 330, *Marketing Management*

MBA 340, *Financial Management*

MBA 350, *Operations Management*

MBA 362, *Corporate Social Responsibility*

- 3) As a capstone course for the M.B.A., *Business Policy* (MBA 360) or *Small Business Management* (MBA 361) is required.
- 4) *Electives*—These courses are designed to meet three objectives: They focus students more intensively on advanced topics in a particular functional area (e.g., marketing research), or they provide students an opportunity to integrate previous course work by applying their knowledge/skills to a particular problem area (e.g., research and development management), or they provide students an opportunity to explore important related topics in management (e.g., legal aspects of management).
- 5) *Optional Research Projects*—Students may engage in some form of faculty-supervised independent study in management in order to demonstrate their ability to apply management concepts and techniques to management problems. This research may take the form of empirical scientific studies, comprehensive case analyses, development of quantitative models (for example, for forecasting and inventory control), comprehensive review of previous work in some managerial area, or some other approved project.

Research must culminate with a major applied research project. The independent research project can be counted as one credit toward the eighteen credit requirement for the M.B.A. degree. For more information, contact the program faculty.

BACKGROUND COURSES

MBA 301 MANAGEMENT ACCOUNTING/ Lecture, Discussion

Provides an understanding of accounting measurements and an appreciation of the ways in which managers use accounting data. Deals with concepts and tools of analysis necessary for the selection, quantification, and communication of business events through the accounting process.

Staff

Offered every semester

MBA 302 QUANTITATIVE METHODS/ Lecture, Discussion

An introduction to basic mathematical and statistical techniques used by management. Topics include: probability, statistical estimation and inference, error analysis, elementary decision theory, regression analysis, and optimization.

Staff

Offered every semester

MBA 303 MANAGERIAL ECONOMICS/ Lecture, Discussion

Designed to provide an overview of micro- and macro-economics, this course helps students gain a general understanding of economics as it affects, and can be influenced by, the manager. Examples of subject areas covered include monetary and fiscal policies, national income and product accounts, demand and cost analysis, pricing, theory of production, business cycles, and forecasting.

Staff

Offered every semester

MBA 304 INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS/ Lecture, Discussion

Presents business applications of computers from two viewpoints, one at the programming level and the other at the systems level. Programming topics include input and output, data representation and manipulation, program control, and subroutines. Systems topics include introduction to frameworks, management of information as a resource, integration of information systems into the organization, and data-base concepts.

Staff Offered every semester

THE CORE CURRICULUM

MBA 310 ORGANIZATION BEHAVIOR/ Lecture, Discussion

Designed to give students an opportunity to experience and investigate the relevancy to management of a series of topics based in psychology, social psychology, and sociology. The course explores the interaction between individuals and the systems in which they live and work, offering insight into the impact—on people and organizations—of individual differences, interpersonal interactions, group situations, and organization structures.

Staff Offered every semester

MBA 330 MARKETING MANAGEMENT/ Lecture, Discussion

Surveys the role of marketing in its environment. Topics include: market targets and positioning, consumer behavior, product policy, pricing, distribution, promotion, international and industrial marketing, marketing of services. Text, readings, cases, and a term project supply experience in strategic market planning and management. Prerequisites: MBA 302 and 303.

Staff Offered every semester

MBA 340 FINANCIAL MANAGEMENT/ Lecture, Discussion

An introductory study of financial decision making from the perspective of the internal financial manager. The major topics are the financing, investment, and dividend decisions of the firm. Prerequisites: MBA 301, 302, and 303.

Staff Offered every semester

MBA 350 OPERATIONS MANAGEMENT/ Lecture, Discussion

Designed to study the techniques and models used in management decision making. Problems are analyzed to explore in-depth various aspects of these techniques and to emphasize their applications. Topics include: production design and process planning, layout of physical facilities, production standards and work methods, job evaluation, forecasting, inventory control, quality control, analytical methods in operations management, material requirements planning, research, and product development. Prerequisites: MBA 301, 302, 303, and 304.

Staff Offered every semester

MBA 362 CORPORATE SOCIAL RESPONSIBILITY/ Lecture, Discussion

Managers must understand their environment to make effective decisions. This course focuses on the interaction between the manager and societal forces. Political, social, economic, and legal issues are considered, and the role of values and ethics in evaluating these environmental forces is analyzed. The primary method of instruction is case study. A paper and group presentations are required. The course integrates analytical skills developed in the basic and core courses. Prerequisites: MBA 310 and 330.

Staff Offered every year

CAPSTONE COURSES

MBA 360 BUSINESS POLICY/ Lecture, Discussion

Focuses on those general management skills involved in choosing the strategy for achieving goals and purposes of organizations and in committing critical resources to those goals. The course integrates the major management functions, viewing the organization as an organic entity comprising a system in itself, which also affects, and is affected by, its environment. The method of instruction is case study. Prerequisites: MBA 310, 330, 340, and 350.

Staff

Offered every year

MBA 361 SMALL BUSINESS MANAGEMENT/ Lecture, Discussion

A survey of the particular problems involved in initiating and operating a small business, with special emphasis on the problems of market structure, finance, and productivity. Entrepreneurial organization and style are discussed relative to a growing and increasingly complex society. Case study and field research projects are the primary methods of instruction. Prerequisites: MBA 310, 330, 340, and 350.

Staff

Offered every year

ELECTIVES

MBA 311 ORGANIZATION STRUCTURE AND PROCESS/ Lecture, Discussion

Studies issues relating to the interaction between organization structure and processes and individuals within organizations. The primary focus is on formal and informal organization. Constraints and opportunities presented by organizations are explored in depth. A combination of lectures, readings, and cases is used. The course is designed primarily around class discussions of cases used to develop analytical skills needed to solve organizational problems. Students are expected to prepare case analyses both individually and in groups. Prerequisite: MBA 310.

Staff

Offered every year

MBA 316 CAREER DEVELOPMENT/ Lecture, Discussion

Students survey major theories of career and adult development and apply those theories in a self-study. Prerequisite: MBA 310.

Staff

Offered every year

MBA 318 GROUP DYNAMICS/ Lecture, Discussion

A review of basic group behavior theory and concepts is followed by more detailed examination of groups as open systems. The class serves as a laboratory for observation and analysis and includes an intensive small group experience. Prerequisite: MBA 310.

Staff

Offered every year

MBA 320 ORGANIZATION DEVELOPMENT/ Lecture, Discussion

A survey of organization development concepts and techniques emphasizing applied behavioral science approaches toward (a) more effective management practices and (b) implementing changes in organizations. In addition to participating in in-class cases, lectures, and exercises, students are expected to meet weekly in work teams. Prerequisite: MBA 310.

Staff

Offered every year

MBA 322 CONSULTING STRATEGIES AND SKILLS/ Lecture, Discussion
Focuses on organization development change agent skills. Viewing the change agent as either an internal or external manager or consultant, the course utilizes a practical approach, in which students engage in and discuss “live” projects. The course involves reading, classroom exercises and discussion, and projects in the areas of organizational diagnosis and change, training design and implementation, and change agent skills. Prerequisites: MBA 318 and 320. MBA 318 may be taken concurrently.

Staff

Offered every year

MBA 325 PERSONNEL MANAGEMENT/ Lecture, Discussion

Explores the general areas of resource management, including job design, recruitment, management development, performance appraisal, counseling, labor relations and collective bargaining, wages and fringe benefits, EEO, OSHA requirements, manpower planning, and women in management. Prerequisite: MBA 310.

Staff

Offered every year

MBA 326 INDUSTRIAL RELATIONS/ Lecture, Discussion

An introduction to the concepts, theory, and practice of labor-management relations. Topics covered include: the development of the trade union movement; the structure, practices, and outcomes of collective bargaining; the administration of the collective agreement; disputes resolution procedures; and the evolving public policy of labor relations. Prerequisite: MBA 325.

Staff

Offered every year

MBA 328 COLLECTIVE BARGAINING/ Lecture, Discussion

An examination of the institution and process of collective bargaining. Topics include the evolution of bargaining, theories of bargaining power and behavior, and the relevant legislative framework. The range of bargaining issues is described along with the variations in bargaining units. The grievance procedure is examined in regard to its role in the application and interpretation of agreements.

Staff

Offered every year

MBA 331 MARKETING RESEARCH/ Seminar

Focuses on defining marketing research problems, choosing appropriate data collection and analysis tools, and interpreting research results to determine implications for marketing strategy. Topics include: questionnaire design; sampling; mail and telephone surveys; focus groups and personal interviews; use of secondary data; regression, factor, discriminant, cluster and decision analyses; conjoint analysis and multidimensional scaling. Research project, written and oral reports, cases. Prerequisite: MBA 330.

Staff

Offered every year

MBA 334 CONSUMER BEHAVIOR/ Seminar

Studies consumers as individuals and in groups. Topics include: complex decision-making models, habit, and low-involvement models; buying behavior of organizations. Term project, written and oral reports, cases. Prerequisite: MBA 330.

Staff

Offered every year

MBA 335 INTERNATIONAL MARKETING/ Lecture, Discussion

Marketing across national boundaries and within selected national markets. Problems and decisions facing marketing managers in the international environment: products, pricing, and promotion necessary to coordinate a firm's international activities. Cases, readings, research projects. Prerequisite: MBA 330.

Staff

Offered every year

MBA 336 MARKETING OF SERVICES/ Lecture, Discussion

Covers the special nature of marketing when the consumer creates the product at the level of consumption and without the opportunity to examine the product first. Service marketing depends heavily on the reputation of the supplier, and upon location/convenience factors; the marketing mix must be adjusted to accommodate these characteristics. The differences between small and large business suppliers and those operating under regulation—such as utilities—are examined. Prerequisite: MBA 330.

Staff

Offered every year

MBA 337 INDUSTRIAL MARKETING/ Lecture, Discussion

Special marketing problems of industrial and other organizational customers including government. Designed for managers of marketing and allied functions such as research and development, engineering, production, purchasing, and corporate planning/strategy. Prerequisite: MBA 330.

Staff

Offered every year

MBA 338 ADVERTISING AND PROMOTION/ Lecture, Discussion

A management approach to the promotion component of the marketing mix. Topics include: print, broadcast, and other advertising; personal selling; sales promotion; publicity, public relations, and display. Field project, written and oral reports, cases. Prerequisite: MBA 330.

Staff

Offered every year

MBA 339 MARKETING IN A HIGH TECHNOLOGY ENVIRONMENT

This course instructs the student in the fundamentals of industrial marketing with particular emphasis on those aspects which are affected by various types of high technology products and markets. The course allows the student to explore the dynamics involved in marketing products with shortening life cycles, intense, technology-fueled competition, and complex buying characteristics.

Staff

Offered every year

MBA 341 CORPORATE FINANCE/ Lecture, Discussion

A survey of recent developments in financial management. Theory, test of theory, and problems in practical implementation are discussed. Prerequisite: MBA 340.

Staff

Offered every year

MBA 342 INVESTMENTS/ Lecture, Discussion

Covers investment principles, market behavior and investment strategy. In addition to stocks and bonds, alternative investments, such as tax shelters and options, are discussed in light of risk-return analysis. Guest speakers from various sectors of the investment community present their views and discuss these with the class. Prerequisite: MBA 340.

Staff

Offered every year

MBA 344 FEDERAL TAX/ Lecture, Discussion

A basic course in the principals of federal income tax laws as they pertain to individuals, partnerships, and corporations. Explores the general rules and account-

ting principles required, emphasizing preparation of tax returns through specific problem analysis. Prerequisite: MBA 301.

Staff

Offered every year

MBA 345 INTERNATIONAL FINANCE/ Seminar

Focuses on specific problems encountered by financial managers in corporations with international financial functions. Topics include: foreign exchange risk, political risk, long-run investment and financing, working capital management, and financial control. Prerequisite: MBA 340.

Staff

Offered every year

MBA 346 FINANCIAL INSTITUTIONS/ Seminar

Deals with an analysis of the role of banks and nonbank financial intermediaries in an advanced industrial economy. Attention is paid to the study of financial markets and institutions, the major financial intermediaries in the U.S. economy, the determination of interest rates, regulatory policy for financial institutions, and the impact of recent institutional and legislative changes on financial intermediaries. Prerequisite: MBA 340.

Staff

Offered every year

MBA 347 MODERN PORTFOLIO THEORY/ Seminar

A course helpful to students interested in furthering their skills in investment management. Initially, the class covers the efficient markets hypothesis and utility theory. From this foundation, investment models are developed theoretically, and the necessary simplifications for implementation of the models are discussed. Students are required to apply the models through actual data. Prerequisite: MBA 340.

Staff

Offered every year

MBA 351 OPERATIONS RESEARCH/ Seminar

A study of operations research techniques useful in business and management decision making, including: classical optimization, linear and integer programming, network models, dynamic programming, queuing theory, Markov processes, and simulation methods. Prerequisite: MBA 350.

Staff

Offered every year

MBA 352 ADVANCED TOPICS IN MANAGEMENT INFORMATION SYSTEMS/ Seminar

A study of theoretical concepts and applications in the field of Management Information Systems (MIS). Specifically, problems, important issues, and recent trends are analyzed in depth to explore various technological as well as managerial aspects of MIS. Hands-on experience with some user-friendly packages as a decision-supporting tool is also emphasized. Topics include: the conceptual framework of MIS and Decision Support Systems (DSS), managerial/behavioral aspects, computer aspects including the concepts of database, user (manager) involvement in the system development life cycle. Prerequisite: MBA 302, MBA 304.

Staff

Offered every year

MBA 354 RESEARCH AND DEVELOPMENT MANAGEMENT/ Seminar

Presents an overview of the characteristics unique to managing a research and development (R & D) unit as well as a general understanding of how the R & D unit relates to the ongoing functioning of the entire organization (marketing, manufacturing, personnel, finance, corporate strategy, etc.). The course provides experiences in applying previously learned behavioral, economic, and

managerial concepts and techniques to the design and management of R & D. Some of the topic areas covered in the course are: the economics of R & D, project selection and scheduling, productivity in the R & D setting, organization and management of R & D, information flows and communication patterns, interaction with other parts of the firm, and planning for R & D. Prerequisites: MBA 310 and 350.
Staff Offered every year

MBA 355 PRODUCTION MANAGEMENT/ Seminar

Focuses on the many complex decisions a production manager faces. Topics include: the design of forecasting, production planning, inventory control, and quality control systems, and how each of these systems is integrated into the firm as a whole. Cases and readings are used extensively. Prerequisite: MBA 350.
Staff Offered every year

MBA 366 THE GENERAL MANAGER/ Seminar

Focuses on actual applications of management concepts and techniques through the perspective of the general manager or chief executive officer of a business. The course features study and discussion of cases drawn from the experience of the class and of the instructor (who is a highly experienced senior executive), along with supplemental lectures and reading. Topics include: developing strategy, coupling strategy to actual operations, building and coaching cross-functional business teams, and stimulating productivity and quality of worklife improvement. Other topics, such as forecasting, production and inventory control, and information systems management, are selected based on the interests of the class. Prerequisites: MBA 301 and 310.
Staff Offered every year

MBA 372 WOMEN IN THE WORKPLACE/ Seminar

Topics include: attitude formation and change, prejudice and discrimination, stereotyping, assertiveness, career advancement, role stress, and power. The instructional format includes lectures, class discussions, cases, and exercises.
Staff Offered every year

MBA 376 SENIOR EXECUTIVE SEMINAR/ Seminar

M.B.A. candidates meet with presidents, chairpersons, CEOs, and senior corporate officers for an off-the-record, question-and-answer seminar. Executives come from a wide variety of organizations. The main thing they have in common is the experience and responsibility of making decisions that affect the future of their organizations. Typical discussions focus on the speakers' values and priorities; ways of thinking about different kinds of problems; attitudes toward their competitors, their industry, and people within their own organization; their personal assessment of the past and outlook on the future. Students chair the meetings, and prepare the briefing, and the de-briefing sessions. The seminar is run in a formal, business-like fashion. Enrollment is limited.
Staff Offered every year

MBA 378 LEGAL ASPECTS OF MANAGEMENT/ Seminar

Examines the legal framework within which American business operates. The course is concerned with various laws that determine both the rights and obligations of persons taking part in business transactions. Emphasis is on those areas of the law commonly encountered by the business manager, such as contract negotiation and provisions, the Uniform Commercial Code, government regulations, consumer protection, and tort liability. Assigned readings and class discus-

sion of selected cases illustrate these topics.

Staff Offered every year

MBA 380 ACCOUNTING CONTROL SYSTEMS

A survey of accounting-oriented techniques used to achieve control over various operations within organizations. Major topics include: responsibility centers, transfer pricing, profit planning and budgeting processes, program selection and evaluation, and executive incentive compensation plans. Prerequisites: MBA 301; MBA 310 is recommended.

Staff Offered every year

MBA 381 ACCOUNTING AND FINANCIAL ANALYSIS

A study of various financial accounting and reporting alternatives and their impact upon selected financial ratios. Topics include: an introduction to financial statement analysis, funds flow analysis, inventory reporting alternatives, depreciation issues, lease reporting, debt vs. capital stock financing, and miscellaneous accounting alternatives. Prerequisite: MBA 301.

Staff Offered every year

MBA 382 ACCOUNTING INFORMATION SYSTEMS

Explains various controls and accounting procedures for collecting, measuring, summarizing, and reporting financial data generated by an organization's various operating activities. Emphasis is on procedural techniques and understanding the flow of financial data through an organization's accounting system. Prerequisites: MBA 301 and 304.

Staff Offered every year

MBA 386 COST MEASUREMENT AND CONTROL

Emphasizes cost collection, and analysis and control procedures of manufacturing organizations. This course explains the relevance of various accounting data for managerial decision-making in manufacturing and nonmanufacturing organizations. Topics include: standards, standard costing, variance analysis, detailed budget preparation, cost accumulation procedures, and various cost control and performance evaluation issues. Prerequisite: MBA 301.

Staff Offered every year

MBA 390 MANAGEMENT ANALYSIS AND COMMUNICATIONS/ Lecture, Discussion

Develops skills in library research, critical thinking, deductive reasoning, and written communication; provides advanced learning in a content area; and offers practice and instruction in oral communication (presentation and meeting management). The course is structured around the writing of a research paper.

Staff Offered every year

MBA 398 DIRECTED RESEARCH IN MANAGEMENT/ Seminar

Offered for variable credit.

Staff Offered every year

MBA 399 DIRECTED READINGS IN MANAGEMENT/ Seminar

Offered for variable credit. Restricted to topics not covered by the curriculum. Permission of MBA program director required.

Staff Offered every year

THE GRADUATE MASTER OF HEALTH ADMINISTRATION PROGRAM

The M.H.A. is a joint program offered in conjunction with the Department of

Family and Community Medicine of the University of Massachusetts Medical School. The M.H.A. program combines the study of management and health, thereby reflecting the administrative and technological complexity of modern health systems.

Students may concentrate in either of two specific areas:

- 1) *health institution administration*—preparing students for careers or career advancement in such fields as hospital administration and health care administration.
- 2) *health systems planning and administration*—preparing students for careers or career advancement in such health agencies as health maintenance organizations, mental health agencies, industrial health programs, health planning agencies, and home health agencies.

The Clark/UMass program is oriented toward students with significant prior work experience in any health field, and nearly all of the students participating in the program are currently employed in health professions. The program will consider exceptionally qualified applicants with little or no experience in the health profession and will arrange a required field experience for those students.

Within the program's framework, students can design individual courses of study to meet their own needs, and individual counseling is available to students as they plan curriculum, internship, and field projects. In addition to background courses, core courses, and electives, a required field project develops problem-solving skills in a professional context.

The M.H.A. program requires sixteen graduate credits for the degree, equivalent to four semesters of full-time graduate study. The sixteen credits are organized into five categories of course work and independent study (courses meet for fourteen weeks, three hours a week, unless otherwise indicated):

- 1) *Three Required Background Courses*—These courses are designed to introduce students to the fundamental language, concepts, and skills underlying the traditional or core functional management areas and provide a framework for health systems analysis.

Management 301, *Managerial Accounting*

Management 302, *Quantitative Methods*

MHA 320, *Health Systems*

Students with previous course work or experience in these areas may elect to waive these courses by passing a written or oral examination.

- 2) *Seven Required Core Courses*—These courses are intended to provide students with basic background knowledge and skills in several important areas in management and health systems.

MHA 310, *Organization Behavior*

MHA 330, *Epidemiology*

MHA 340, *Health Planning*

MHA 350, *Economic Aspects of the Medical Care Industry*

MHA 360, *Legal Aspects of Health Care Administration*

MHA 370, *Financial Management of Health Institutions*

MHA 380, *Health Systems and Institutions Policy Analysis*

- 3) *Two Courses Required in a Student's Area of Concentration*—Two areas of concentration are available: Health Institution Administration

MHA 390, *Management Information Systems for Health Administration*

MBA 330, *Marketing Management*

Health Systems Planning and Administration

MHA 376, *Sociology of Health Care*

MHA 378, *The Human Ecology of Illness and Health Care*

- 4) *Three Electives*—These courses are designed to focus students more intensively on advanced topics in a particular functional area, or they provide students an opportunity to integrate previous course work by applying their knowledge/skills

to a particular problem area, or they provide students an opportunity to explore important related topics in management and health systems.

- MHA 341, *Hospital Planning*
- MHA 381, *Case Studies in Health Administration*
- MHA 382, *Case Studies in Hospital Administration*
- MHA 383, *Ambulatory Care Administration*
- MHA 384, *Long Term Care Administration*
- MHA 385, *Health Promotion and Disease Prevention*
- MHA 374, *Information Management*
- MHA 398, *Directed Research*
- MHA 399, *Directed Readings*

5) *Applied Field Project*—MHA 400: independent study to demonstrate the student's ability to apply health administration concepts.

COURSES

BACKGROUND COURSES

MBA 301 MANAGERIAL ACCOUNTING

See course description under MBA listings.

MBA 302 QUANTITATIVE METHODS

See course description under MBA listings.

MHA 320 HEALTH SYSTEMS/ Lecture, Discussion

Examines various input-through-output models of health systems and discusses information necessary to understand the variety of components and linkages. The systems approach is used to identify key issues in various health service sectors, particularly primary care, hospital service, and high technology services. Discussions and student papers focus on key policy issues related to health systems in the United States and other countries.

Staff Offered every year

REQUIRED CORE COURSES

MHA 310 ORGANIZATION BEHAVIOR IN HEALTH ADMINISTRATION/ Lecture, Discussion

Focuses on understanding human behavior in the organization context with implications for effective management. Specific managerial techniques intended to improve the utilization and coordination of human resources in organizations are explored through case studies and exercises.

Staff Offered every year

MHA 330 PRINCIPLES OF EPIDEMIOLOGY/ Lecture, Discussion

Covers the basic principles and skills used by the epidemiologist to uncover and explain disease patterns in humans. Included are: description of disease by person, place, and time; principles of study design; analysis and interpretation of epidemiologic data. Emphasis is on practical application through examples from literature as well as student projects.

Staff Offered every year

MHA 340 HEALTH PLANNING/ Lecture, Discussion

Examines health planning concepts and methods with considerable attention to their practice at the local, regional, state, and national level. Topics discussed include the history of health planning in the United States, health systems analysis,

goal and priority setting, cost effectiveness studies, politics of health planning, plan implementation, and program evaluation. Analyses of actual health plans are included.

Staff

Offered every year

MHA 350 ECONOMIC ASPECTS OF THE MEDICAL CARE INDUSTRY/

Lecture, Discussion

Examines the economic aspects of the health services system in the United States in terms of production, distribution, and institutional structure. Topics discussed include determining demand for medical care, financing and delivery mechanisms and their effects, and the medical manpower market. The role of government planning and regulation of the medical care industry also is studied. Particular emphasis is given to economic analysis of the major alternative programs being proposed to restructure the American medical care system. No previous training in economics is necessary; economic concepts are explained as the course progresses.

Staff

Offered every year

MHA 360 LEGAL ASPECTS OF HEALTH CARE ADMINISTRATION/

Lecture, Discussion

Focuses on the study of the legal foundations, principles, and processes that influence the provision of individual and community health services. Consideration is given to the origins of health law, individual and corporate liability, the physician/patient relationship, legal aspects of hospital administration, health legislative activities, and controversial medical/legal issues.

Staff

Offered every year

MHA 370 FINANCIAL MANAGEMENT OF HEALTH INSTITUTIONS/

Lecture, Discussion

A comprehensive study of financial decision making in hospitals and other health care institutions. Topics covered include both the varied sources of financing and the efficient allocation of resources. The main format is the use of accounting data to implement economic models. Prerequisites: MBA 301, 302, and MHA 350.

Staff

Offered every year

MHA 371 HEALTH CARE MANAGEMENT/ Seminar

Surveys the field of health care management from the perspective of the manager. The course covers some of the major managerial issues in health care, which include understanding the job of the manager, managing professionals, organization structure and design, organization efficiency and effectiveness, strategic management, and the major organizational processes, such as leadership, budgeting, power, decision making, and implementation.

Staff

Offered every year

MHA 380 HEALTH SYSTEMS AND INSTITUTIONS POLICY ANALYSIS/

Seminar

A synthesis of background and core coursework using case studies that focus on multidisciplinary solutions to actual problems. About half of the case studies involve health system problems, and half refer to health institution problems. Prerequisites: MBA 301, 302, MHA 310, 320, 330, 340, 350, 360, 370.

Staff

Offered every year

**CORE COURSES (INSTITUTIONAL ADMINISTRATION
CONCENTRATION)**

**MBA 330 MARKETING MANAGEMENT/
Lecture, Discussion**

See course description under MBA listings.

**MHA 390 MANAGEMENT INFORMATION SYSTEMS FOR HEALTH
ADMINISTRATION/ Lecture, Discussion**

Focuses on various issues a health care manager faces regarding management information systems. Topics include: conceptual foundations for information systems, managing and organizing the information services function, system implementation, the concept of decision support systems, use of financial planning models and other computer-based planning models, and some selected quantitative methods for health care. Research projects and hands-on computer experience are stressed.

Staff Offered every other year

**CORE COURSES (HEALTH SYSTEMS PLANNING AND
ADMINISTRATION CONCENTRATION)**

MHA 376 SOCIOLOGY OF HEALTH CARE/ Seminar

Basic concepts in sociological analysis are applied to hospitals and other care facilities as social structures, to the social definition of illness, and to health behavior. Discussion of social movements and their implications for the future of health care delivery. Included in these discussions are the rise of technology vis-a-vis the therapeutic relationships and the growing tendency of individuals to take more responsibility for their own well-being (yoga, etc.) Students develop models for broadly conceived solutions to major problems in the American health care system.

Staff Offered every year

**MHA 378 THE HUMAN ECOLOGY OF ILLNESS AND HEALTH CARE/
Lecture, Discussion**

Emphasizes the interplay of psychological and environmental influences on health, illness associated behaviors, and the provision of health care services. Traditional medical perspectives are critiqued, and the possibilities of an ecological framework for examining health and health care issues are discussed.

Staff Offered every year

ELECTIVES

MBA 336 MARKETING OF SERVICES/ Lecture, Discussion

See course description under MBA listings.

MHA 341 HOSPITAL PLANNING/ Seminar

Examines input-output models of hospital systems and applies these models to problem identification, goal and objective setting, strategy development, and project evaluation. Also focuses on environmental factors influencing change in hospital systems. Actual hospital plans are analyzed.

Staff Offered every year

MHA 381 CASE STUDIES IN HEALTH ADMINISTRATION/ Seminar

Focus is on hospital and multihospital systems. Cases relate to such topics as long-

range facility planning, sharing hospital services, hospital responses to community needs, small hospital issues, hospital mergers, and multi-hospital systems. Students prepare written analyses of case studies for classroom discussion.

Staff

Offered every year

MHA 382 CASE STUDIES IN HOSPITAL ADMINISTRATION/ Seminar

Focus is on internal hospital problems and managerial responses; cases relate to personnel, equipment, inventory, financing, and policy issues in a variety of hospital types ranging from university teaching hospitals to small rural hospitals.

Staff

Offered every year

MHA 383 AMBULATORY CARE PLANNING AND ADMINISTRATION/ Seminar

Applies planning and administration concepts and methods to the variety of ambulatory care institutions, including freestanding health centers, HMOs, and hospital outpatient departments.

Staff

Offered every year

MHA 384 LONG TERM CARE ADMINISTRATION/ Seminar

Applies management concepts to nursing homes and other long-term care programs. The course focuses on management of personnel, financial and other resources, and on strategic planning to respond to present and future environmental factors. Case studies are used.

Staff

Offered every year

MHA 385 HEALTH PROMOTION AND DISEASE PREVENTION/ Seminar

Utilizes a natural history-of-disease framework to identify and evaluate prevention/promotion strategies. Among the primary prevention approaches examined are those addressing specific types of cancer, heart disease, substance abuse, mental illness, and infectious diseases. A broad range of screening services (secondary prevention) are also studied. Strategies are evaluated in terms of their effectiveness, costs, target population, resources, and service protocols. Student papers and presentations on specific health promotion and disease prevention programs are required.

Staff

Offered every year

MHA 399 DIRECTED READINGS

MHA 400 APPLIED FIELD PROJECT

Mathematics and Computer Science

DEPARTMENT FACULTY

David Joyce, Ph.D., *chair*: algebraic topology, combinatorics, computer science

Arthur Chou, Ph.D.: differential geometry; theoretical computer science

Edward Cline, Ph.D.: algebra, representation theory of algebraic groups

Richard Dipper, Ph.D.: modular representation theory

Fred Green, Ph.D.: computational complexity

Charles Helou, Ph.D.: algebraic number theory

Roy Joshua, Ph.D.: algebraic geometry, algebraic topology, computer science

John F. Kennison, Ph.D.: topology, category theory
 Robert W. Kilmoyer Jr., Ph.D.: algebra, representation theory of groups,
 artificial intelligence
 Lawrence E. Morris, Ph.D.: automorphic representations, algebraic geometry
 Wayne Neidhardt, Ph.D.: Kac-Moody Lie algebras
 Michael St. Vincent, Ph.D.: dynamical systems, nonlinear oscillators
 Evelyn Vaskas, Ph.D.: number theory

UNDERGRADUATE PROGRAM

The Mathematics Department serves four distinct areas in the University: the mathematical services facility is available for students interested primarily in elementary mathematics. The department offers several courses of a general nature to meet the needs of students in all levels who are interested in mathematics as a discipline in itself or as a foundation for further study in other disciplines. The undergraduate mathematics major provides a number of different tracks, which introduce a student seriously interested in mathematics to this subject and to its applications. Finally, the department offers a major in computer science.

MATHEMATICAL SERVICES: A variety of elementary mathematical needs are met by the *Math Clinic and Tutorial* (Mathematics 10). Students work at their own pace and choose a program suited to their own needs. The course is not offered for credit.

Math 100, *Introduction to Mathematics*, reviews algebra, logarithms and exponentiation, and trigonometry. It serves as a precalculus course and as a course covering the material requisite for other 100-level math courses. Students may also use this course as a way to strengthen their background in high school mathematics.

GENERAL COURSES: Knowledge of calculus (beginning with Math 120, *Calculus I*) is essential for any serious student of the natural sciences or mathematics. It also is used heavily in economics and has been applied extensively in other disciplines.

Math 120 is normally open to freshmen; however, students with a weak background are advised to take Math 100, *Introduction to Mathematics*, first. A placement test is given during orientation week, and other diagnostic tests are available for students who are uncertain about which course to take. These placement tests are available at the department office. It is possible to omit Math 120 and Math 121, *Calculus I and II*, and begin with Math 130, *Intermediate Calculus*, if sufficient achievement is shown on the advanced placement test given in high school. Students who achieve such advanced placement automatically receive credit for Math 120 and 121. Serious students may wish to take *Honors Calculus* (Math 124, 125).

Students who want a survey course in computer science should take Computer Science 99. This course was designed for students who want only one course in computer science. Students who have more interest in computer science should begin with Computer Science 101, *Computer Programming I*, (which is a prerequisite to all higher numbered computer science courses) to be followed by Computer Science 102, *Computer Programming II*.

Linear Algebra (Math 119, 133) has many applications in the natural and social sciences, as does *Statistical Methods* (Math 147). *Mathematical Models* (Math 164) discusses how mathematics is used in social sciences.

Students who want to experience some of the beauty of mathematical reasoning at an elementary level might take Math 102, *Geometry*; Math 104, *Number Theory*; or Math 107, *Logic*.

The department offers several advanced courses in abstract mathematics, three of which are Math 213-214, *Modern Analysis*; Math 225-226, *Modern Algebra*; and Math 228-229, *Topology*. These are intended for mathematics majors and others

who have strong mathematics backgrounds, a taste for logically rigorous mathematics, and a willingness to work independently.

THE MAJORS IN MATHEMATICS AND COMPUTER SCIENCE

The department offers majors in computer science and in mathematics. The requirements for the various tracks have been changed from those described in the 1984-86 *Clark University Academic Catalogue*. Students declaring a major after June 1, 1986, must satisfy the requirements listed below. Those who declared before June 1, 1986 may satisfy either the old requirements or these new requirements. The department requires that courses within the major be taken on a graded basis.

THE COMPUTER SCIENCE MAJOR

The computer science major has been designed for the education of computer scientists who will also have a solid background in mathematics. The major has been broadened to allow students to concentrate in various fields in computer science. To encourage breadth, the department requires the student to do significant work in a minor area.

REQUIREMENTS FOR THE COMPUTER SCIENCE MAJOR

	Credits
Computer Science 101, 102	2
Three of Math 119, Math 147, Computer Science 145, Computer Science 215	3
Math 114	1
Computer Science 140	1
Computer Science 160	1
Math 120, 121 or Math 124, 125	2
Two 200-level courses (excluding Computer Science 215, if taken as one of the above)	2
Capstone (arranged with an adviser)	1
Other Math or Computer Science course	1
Four course minor	4
TOTAL	18 credits

Note that Computer Science 99 and Math 100 are not allowed as credit for the 18 courses required for the Computer Science major.

The department requires a four-course-unit minor in any subject. The minor may be selected from any department or program. Introductory courses for non-majors are not to be counted in the minor. If the minor is chosen in mathematics, then eighteen units are required in computer science and mathematics, and four units of these must not be taken as part of the fulfillment of the major requirements described above.

SUGGESTED CONCENTRATIONS IN COMPUTER SCIENCE

For students who intend to go to graduate school, the department particularly recommends the following courses: Physics 117/Computer Science 145, Computer Science 215, Math 119, Math 147, Computer Science 230-231 and Computer Science 170.

Students interested in the principles of software development could consider choices from Computer Science 170, Computer Science 210, Computer Science 215, Computer Science 220, and Computer Science 250 or 231.

Students interested in using the computer as a modeling tool in applied mathematics should consider the courses Math 158, Math 164, Math 119, Math 147, and Physics 115. Alternatively, they could major in applied mathematics with a minor in computer science (perhaps the better option).

THE MATHEMATICS MAJOR

There are programs in pure mathematics, applied mathematics, actuarial science, mathematics/management, and mathematics/ education. The objectives and requirements for these programs are outlined below. Although the following descriptions are brief, we hope they indicate the nature of the program involved. We encourage students to call on the department for additional information.

PURE MATHEMATICS

The pure mathematics major at Clark is designed for two groups of students. The first group includes liberal arts students interested in the broad spectrum of mathematical thought. Such students will find sufficient flexibility in the program to meet their needs. The second group consists of those students planning graduate work in mathematics.

The required courses for this major are listed below. Suggested elective courses in mathematics are Math 102, 104, 107, 213-214, 216, 225-226, and 244. Math 213-214, *Modern Analysis I and II*; Math 225-226, *Modern Algebra I and II*; and Math 228-229, *Topology*, are highly recommended.

The pure mathematics major has a minor requirement. The objective is that the student be involved in a science to a sufficient depth to ensure that some of the uses of mathematics are illustrated. Each student takes four units in one of the science departments, at least one of which uses mathematics heavily. Introductory courses that are designed for nonmajors will not be counted toward the minor. Ordinarily, minors from chemistry, physics, ETS, and computer science are acceptable without approval.

REQUIREMENTS:	Credits
*Math 124-125	2
Math 130-131	2
Math 133	1
Four 200-level math courses, including Math 225; two in sequence to form a capstone	4
At least three other math or theoretical computer science courses	3
Four course minor in science	4
TOTAL	16 credits
*Math 120-121 may substitute for Math 124-125 upon completion of additional work specified by the department.	

The department strongly recommends one year of physics (Physics 110 and 111) for the pure mathematics major.

APPLIED MATHEMATICS

The applied mathematics major is designed for students interested in the application of mathematics to natural or social science. The major emphasizes analysis for the physical sciences and probability and statistics for the life and social sciences. In addition to those students interested in the applied mathematics major (either alone or as a component of a dual major), it is hoped that the list of courses below will be useful to science students designing a minor

in mathematics. It is strongly recommended that students interested in physical sciences take Math 216, *Introduction to Functions of a Complex Variable*, and that those interested in life and social sciences take Math 217 and 218, *Mathematical Statistics I and II*. Students interested in graduate school should consider the other 200-level courses, especially Math 213-214, *Modern Analysis I and II*.

The minor requirement consists of a substantial sequence of courses in a mathematically oriented science. The requirement does not include introductory courses for nonmajors. Minors from chemistry, computer science, physics, and ETS are acceptable without approval. Other fields are acceptable with departmental approval. The criterion for approval is that a large proportion of the minor courses involve the application of mathematical techniques.

REQUIREMENTS:	Credits
Math 114	1
Math 120-121 or Math 124-125 (The latter is recommended.)	22
Math 130-131	2
Math 133	1
Math 216 and Math 244 or Math 217 and Math 218	2
Two of Math 164, 158, 247, Computer Science 101	2
Physics	2
Four course minor in natural or social science	4
TOTAL	16 credits

ACTUARIAL SCIENCE

Actuarial science could be described as the science of finance and insurance. Study in this field requires a firm grounding in mathematics followed by courses in statistics, economics, and business management.

While there is no major in actuarial science, students interested in this field should major in applied math or mathematics/management, take Math 217-218, and *consult the department about actuarial examinations as soon as possible.*

MATHEMATICS/MANAGEMENT

This track is essentially a mathematics major tailored for students with a strong interest in management or operations research. Its objective is to prepare the student for (1) a career in business management, (2) graduate study in operations research, or (3) graduate work in a business-administration program. Also, it has been designed as an undergraduate major for students in the five-year M.B.A. program. Courses of special interest for operations research are Math 113, 119, 164, and 247.

REQUIREMENTS:	Credits
Math 120-121 or 124-125 (Calculus)	2
Math 147	1
Math 119	1
Three of Math 164, 130, 131, 247	3
Two of Computer Science 101, 102, 160	2
Management 201, 210	2
One of Management 230, 240, 250	1
Economics 10, 11	2
TOTAL	14 credits

In addition, Economics 205 is strongly recommended.

MATHEMATICS/EDUCATION

The mathematics/education program is designed for students preparing to teach secondary school. This program consists of a major in mathematics containing courses relevant to students' future needs in teaching and a minor in education. The education minor will lead to a certification in Massachusetts (interstate certification approval is pending). See the Education Department as early as possible for further details. There is a shortage of high school mathematics teachers and so there are scholarships, loans, and other inducements available to help alleviate this shortage.

REQUIREMENTS:	Credits
Math 102, 114	2
Math 120-121 or Math 124-125 (Calculus)	2
Math 130	1
Math 119 or 133	1
Math 104	1
Math 217	1
Computer Science 101	1
Six education courses	6
TOTAL	15 credits

DECLARING A MAJOR AND CHOOSING A DEPARTMENTAL ADVISER

A student must declare his or her major no later than the end of the second semester, sophomore year. The registrar's office has "declaration of major" forms. At this time the student should choose a departmental adviser who will discuss majoring in computer science or one of the mathematics majors and who may sign the form. A departmental form is also to be filled out at this time and kept in the departmental office. The adviser may be any full-time, nonvisiting member of the department.

HONORS PROGRAM

Majors in computer science or mathematics who maintain at least a 3.2 average in courses required for their major may apply for the departmental honors program. Application in writing must be received by the end of the junior year by a prospective honors adviser or by the chair of the department. Honors may be achieved in one of two ways:

- (1)A unified four-course sequence as a senior (some parts of which may consist of readings courses), followed by a comprehensive examination.
- (2)An honors thesis to be presented at an oral defense or at a departmental seminar. This thesis may be an independent or joint research project, or an analytic dissertation. Supporting coursework may be required. The student registers for Computer Science or Math 299.8 for course credit for an honors thesis.

Upon satisfactory completion of the program the department may recommend graduation with honors, high honors, or highest honors.

GRADUATE PROGRAM

The department offers courses leading to the degrees of master of arts and doctor of philosophy in mathematics. The requirement for the M.A.* are: (1) ten full courses at least eight of which must be on the 300 level. These courses usually include one or two full courses of Math 330—the writing of the master's thesis. They may include seminars and reading courses. (2) that the basic courses, Math 316, 318, and 325 must be included. Each of these requirements may be waived for a student presenting evidence satisfying the department of his or her knowledge of the material in question; (3) a master's thesis and (4) an oral examination.

A student working toward a Ph.D. degree and electing to omit the M.A. thesis and M.A. oral examination will be recommended for the M.A. degree upon successful completion of the Ph.D. preliminary examination.

The requirements for the Ph.D.* follow the general requirements of the graduate school. The Ph.D. preliminary examination is usually given orally, but may be written under certain circumstances. Students should consult with their advisers by November of their second year. Students entering with a master's degree should discuss the examination with a departmental adviser immediately. Failure to take this examination at the appropriate time may result in the department's not recommending a student for continued support. Scholarships, graduate instructorships, and new courses are subject to final approval by the Graduate Board.

The language requirement will be considered to have been fulfilled if the candidate can demonstrate sufficient linguistic ability to carry on effective research in his or her field. The department's decision concerning this requirement will depend heavily upon the recommendation of the candidate's adviser.

*All candidates for the M.A. and Ph.D. degrees in Mathematics are required to serve as teaching assistants or as assistants in the computing center as part of the work for their degree.

COMPUTER SCIENCE COURSES

CS 99 COMPUTERS AND HUMAN REASON/ Lecture, Laboratory

The goal of the course is to gain an understanding of computers and the pervasive role they now play in society. It studies how computers work, and what makes them so powerful. Computers are considered from the perspectives of history, sociology, psychology, philosophy, science and technology. We shall survey some of the work in artificial intelligence, the role of computers in cognitive science, and the nature of computer models and theories. Two class meetings and one laboratory meeting per week. The laboratory provides "hands-on" experience and includes word processing; spreadsheet analysis; and programming in Lisp, the language of choice for artificial intelligence. Demonstration programs are available for experimentation and modification. No Prerequisites; open to freshmen. Prior knowledge of computers or programming experience will not be assumed.

Mr. Green

Offered every year

CS 101 COMPUTER PROGRAMMING I/ Lecture, Laboratory

An introduction to computer programming using the language Pascal, a powerful general purpose, structured language. Development of algorithms and top-down design of programs. Topics through arrays, procedures and functions, and text files. Applications to business, data manipulation of both numerical and non-numerical types, simulations involving games. Satisfies the *formal analysis* requirement. No prerequisites beyond high school algebra. This course is prerequisite to all higher-numbered computer science courses.

Mr. Green, Mr. Joyce, Mr. Neidhardt

Offered every semester

CS 102 COMPUTER PROGRAMMING II/ Lecture

A continuation of CS 101 covering topics such as string manipulation; files of records and their processing; dynamic data structures such as stacks, list, and queues; recursion; introduction to algorithm efficiency; internal searching and sorting. Projects involve larger programs that apply the above techniques primarily to nonnumerical problems. Prerequisite: CS 101.

Mr. Chou, Mr. Joshua, Mr. Joyce, Mr. Kilmoyer

Offered every semester

CS 115 COMPUTER SIMULATION LABORATORY

Refer to course description under Physics 115.

CS 117 MICROCOMPUTER LABORATORY

Refer to course description under Physics 117.

Mr. Andersen

Offered every other year

CS 140 ASSEMBLY LANGUAGE (VAX-11)/ Lecture

Fundamentals of assembly language programming in the VAX/MACRO language, a short discussion of VAX organization and architecture, data representation, the instruction set, addressing modes, machine code, macros, stacks, subroutines, linking MACRO procedures and higher-level language procedures, input and output, reentrancy, and recursion. As time permits, further topics relating to the design of an assembler and a macro processor, discussion of the linker, record management, and service procedures will be discussed. Prerequisite: CS 102.

Mr. Cline

Offered every year

CS 145 INTRODUCTION TO COMPUTER ORGANIZATION/ Lecture

A study of computer organization and logic design, this course is intended for students with a strong interest in computers and computing systems. It is especially recommended for students going on to graduate school in computer science. Topics include the structure and organization of the major components of computers, and the mechanics of information transfer and control within the system. The functional, logical level is emphasized rather than the circuit details of hardware. Prerequisite: CS 102.

Mr. Chou

Offered every other year

CS 160 DATA STRUCTURES AND ALGORITHM ANALYSIS/ Lecture

Data structures such as sets, lists, trees, and graphs are discussed along with the algorithms to implement them. Students learn to compare structures and to implement them. Students learn to compare structures and to analyze algorithms for their efficiency. Topics include dynamic list processing, search/sort/merge methods, memory management, hash coding, and introduction to complexity of algorithms. Prerequisites: CS 102 and Math 114.

Mr. Chou

Offered every year

CS 170 COMPARATIVE ANALYSIS OF PROGRAMMING LANGUAGES/ Lecture

Deals with the issues of design and implementation of programming languages from both a syntactic and a semantic point of view. Programming exercises in several languages are assigned to illustrate the run-time characteristics of the language and its special features such as list or string processing and amenability to structured programming techniques. Prerequisite: CS 102.

Mr. Joshua, Mr. Kilmoyer

Offered every other year

CS 210 ARTIFICIAL INTELLIGENCE/ Lecture

The focus of the course is the development of the fundamental ideas embodied in the field of artificial intelligence such as problem representation through explicit models; the notion of problem state, state variable, feedback and control, knowledge representation, frames, planning, rule based systems, forward and backward deduction, analogy and pattern recognition. Includes a survey of some of the achievements of artificial intelligence in areas such as expert systems and understanding of natural language. Students will implement some of the above ideas explicitly through computer models. Language instruction will be provided

in Lisp or Prolog. Open to all students who have taken at least one programming course.

Mr. Green, Mr. Kilmoyer

Offered every year

CS 215 OPERATING SYSTEMS/ Lecture

This advanced course studies the structure, performance, and design of operating systems. Topics include concurrency, deadlocks, scheduling, and memory management. The abstract viewpoint is stressed rather than a specific operating system. Students design sections of operating systems. Prerequisite: CS 160.

Mr. Joshua

Offered every other year

CS 220 DATABASE MANAGEMENT AND SYSTEMS DESIGN/ Lecture

An advanced course on the realities of database technology emphasizes the goals of database management: performance, data integrity, future compatibility, and versatility. The concept of data model is examined and a specific database is discussed. The student will design and implement a database management system that includes file security and query facilities. Prerequisite: CS 160.

Mr. Cline

Offered every year

CS 230 AUTOMATA, COMPUTABILITY, AND FORMAL LANGUAGES/ Lecture

The abstract ideas that are fundamental to computer science—"machine," "computation," and "language"—are studied in this course. Primarily theoretical, this course also has applications to computer programming languages, and to linguistics, and compiler writing. Topics include finite state machines, regular grammars and expressions, pushdown automata, context-free grammars and languages, precedence grammars, Turing machines, Church's thesis and computable functions, unsolvable problems, introduction to computational complexity, and intractable problems. Prerequisite: CS 102 and Math 114.

Mr. Morris

Offered every year

CS 231 PARSING AND COMPILERS/ Lecture

This course uses automata and context-free grammars to study the standard algorithms employed in the front ends of compilers. Topics include lexical analyzers and generators; LL1, LR, LALR grammars and parsers (including recursive descent); error recovery; symbol tables; type checking; run time environment; and intermediate code generation. Students are required to design and implement a small compiler. Prerequisite: CS 230.

Mr. Morris

Offered every year

CS 250 SOFTWARE DESIGN AND DEVELOPMENT/ Seminar

Students work in teams to organize, develop, and manage a major project in software design starting with a problem more or less vaguely defined, and proceeding to a concrete solution. The course provides a means for applying techniques learned in earlier classes and obtaining experience in system analysis. Prerequisite: CS 160.

Mr. Kennison

Offered every year

MATHEMATICS COURSES

Math 100 INTRODUCTION TO MATHEMATICS/ Lecture

Intended for students going on to calculus. Topics include basic set theory; functions and relations; geometric significance of real relations and functions with applications to rational and elementary transcendental functions; finding zeroes of

functions; and solutions of inequalities. Students should have a solid grasp of elementary algebra.

Mr. Helou, Mr. Morris

Offered every semester

Math 102 GEOMETRY/ Lecture

Begins with a discussion of Euclidean geometry and quickly proceeds to modern related topics. Such topics may include Hilbert's axioms of geometry, the parallel postulate, hyperbolic (Lobachevskian) geometry, elliptic geometry, projective geometry, models of such geometries and philosophical implications of their existence, finite geometries, Klein's Erlanger Programme, and automorphism groups of geometries. One of the aims of this course is to show the beauty of the deductive approach in mathematics. Prerequisites: High school geometry and the equivalent of Math 100.

Mr. Kennison

Offered every other year

Math 104 THEORY OF NUMBERS/ Lecture

An introduction to number theory, this course also aims to train students to understand mathematical reasoning and learn to write proofs. Topics covered include the unique factorization of integers as products of primes, the Euclidean algorithm, congruencies, Fermat's theorem, and Euler's theorem (and some applications of the latter, e.g., magic squares). Prerequisite: equivalent of Math 100.

Ms. Vaskas

Offered every other year

Math 107 LOGIC/ Lecture

The propositional calculus and the first-order predicate calculus, which consist of a symbolic language and a method of proving statements made in that language, are constructed and discussed predominantly in relation to mathematical questions such as consistency and completeness.

Mr. Joyce

Offered every other year

Math 114 DISCRETE MATHEMATICS/ Lecture

Studies mathematical structures which naturally arise in computer science. Topics include elementary logic and set theory, equivalence relations, functions, counting arguments, asymptotic complexity, inductively defined sets, recursion, graphs and trees, Boolean algebra and combinational circuits, finite state automata, and diagonalization and countability arguments. Proofs and problem solving are emphasized. Prerequisite: CS 101. Corequisite: CS 102 or Calculus.

Mr. Morris

Offered every year

Math 119 APPLIED LINEAR ALGEBRA/ Lecture

A study of the fundamental results and computational techniques of matrix algebra and vector spaces. Topics covered may include systems of linear equations, Gaussian elimination, matrix algebra, determinants, vector spaces, and linear transformations and applications, including the simplex method of linear programming. Also, the numerical analysis relevant to the fundamental computer algorithms related to this subject is discussed. Prerequisite: Math 100 or pass the math placement test.

Mr. Dipper

Offered every year

Math 120 and 121 INTRODUCTION TO CALCULUS I and II/ Lecture, Discussion

Topics in part I include functions, sequences and limits, series, continuity, differentiation, mean value theory, and various applications. Topics in part II include motivation for, and definition of, Riemann sums and integrals; techniques and application of integration; improper integrals; and introduction to calculus of

several variables. In this course, rigorous statements and intuitive notions are distinguished carefully. Calculus is essential for majors in biology, chemistry, computer science, mathematics, physics, and ETS. Math 120 fulfills the *formal analysis* requirement. Prerequisite: Math 100 or an appropriate score on the mathematics placement test.

Mr. Kennison, Mr. Helou

Offered every semester

Mr. St. Vincent, Ms. Vaskas

Math 124 and 125 HONORS CALCULUS I and II/ Lecture, Discussion

This course is for mathematics majors and others who are interested in a deeper and more rigorous study of the topics considered in Math 120 and Math 121 and is a requirement for all Pure Mathematics majors. Prerequisites: Math 100 or an appropriate score on the mathematics placement test.

Mr. Morris

Offered every year

Math 130 and 131 MULTIVARIATE CALCULUS I and II/ Lecture

Deals with functions of several variables. Topics covered include preliminary material on matrix algebra, differential and integral calculus in several variables, line and surface integration, Stokes' theorem, and an introduction to ordinary differential equations. Prerequisite: Math 121.

Mr. Cline

Offered every year

Math 133 LINEAR ALGEBRA/ Lecture

This course is required for Pure and Applied Mathematics majors and continues the study of linear algebra begun in Math 130. Topics include linear transformations, minimum and characteristic polynomials, eigenvectors and eigenvalues, canonical forms, bilinear and hermitian forms, and associated symmetries. Prerequisite: Math 130.

Staff

Offered every year

Math 147 STATISTICAL METHODS FOR COMPUTER SCIENCE/ Lecture

Aim is to model those random phenomena that arise naturally in computer science. After the basic concepts of probability and statistics are introduced, applications are made to algorithm analysis, storage requirements, and user systems. Prerequisites: CS 101 and Math 120.

Mr. Kennison

Offered every year

Math 158 ELEMENTARY NUMERICAL ANALYSIS/ Lecture

A one-semester introductory course in numerical analysis and the application of computers to the solution of certain numerical problems. Topics covered include interpolation, error analysis, and numerical differentiation and integration. Prerequisites: Math 121 and CS 101, or permission of instructor.

Mr. Chou

Offered every year

Math 164 MATHEMATICAL MODELS/ Lecture

Of interest to students who want to understand more closely the relation between mathematics and the sciences. Mathematical models come in two types: deterministic and nondeterministic. The deterministic models employ methods from algebra, axiomatics, linear algebra, calculus, and differential equations. The nondeterministic models employ probability, statistics, and linear algebra. Rather than focusing on methods, the course discusses critically some very interesting applications taken from social and life sciences. These applications require less technical background than the classical models in physics and engineering. Prerequisites: Math 120 and CS 101.

Mr. Kilmoyer

Offered every other year

Math 213 and 214 MODERN ANALYSIS I and II/ Lecture

Ideas first encountered in calculus are studied using topological and metric methods. Problems which led to the development of calculus are then studied from this point of view. Topics covered include convergence, differentiation and integration, trigonometric and Fourier series, periodic distributions, Hilbert spaces, L2-analysis and applications to one-dimensional heat, wave and Laplace equations of mathematical physics. Prerequisite: Math 131 or permission of instructor.

Mr. Neidhardt

Offered every other year

Math 216 INTRODUCTION TO FUNCTIONS OF A COMPLEX VARIABLE/ Lecture

An introductory course designed for undergraduate science majors as well as mathematics majors. Cauchy's theorem, power series, Laurent series, the residue theorem, harmonic functions, and physical applications, such as problems in two dimensional flow, are among the topics to be covered. The object is to convey understanding of the classical theorems of complex analysis as opposed to rigorous proofs of their most general statements. Prerequisite: Math 131 or permission of instructor.

Mr. Dipper

Offered every other year

Math 217 and 218 MATHEMATICAL STATISTICS I and II/ Lecture

Designed to introduce students to the theory and applications of probability and statistics. Techniques used to solve problems are stressed along with the associated mathematical theory. Among the topics covered are combinatorial methods, postulates of probability, stochastic processes, probability densities, mathematical expectation, sampling distributions, estimation, hypothesis testing, regression, and correlation. The syllabus for this course includes most of the material recommended for those preparing for the second (F.S.A.) actuarial examination. Corequisite: Math 130.

Mr. Kennison

Offered every year

Math 225 and 226 MODERN ALGEBRA I and II/ Lecture

The theory of groups, rings, fields, integral domains, canonical forms, and related topics. The treatment is axiomatic with emphasis on the construction of the proofs of certain theorems. Prerequisite: Math 113 or permission of instructor.

Mr. Kilmoyer

Offered every other year

Math 228 and 229 TOPOLOGY I and II/ Lecture

Point set topology, metrization theorems, and extension theorems are covered during part I. In part II, algebraic topology, a branch of mathematics that studies properties of solids and surfaces under continuous deformation (i.e., the geometry of rubber sheets), is introduced. Topics in homotopy and homology theory are covered. Prerequisite: Math 131.

Mr. Dipper

Offered every other year

Math 244 DIFFERENTIAL EQUATIONS/ Lecture

First order and linear differential equations are covered. Various methods of solution are stressed, i.e., series, integrating factors, variation of parameters, etc. An introduction to partial differential equations and boundary value problems is discussed, with some applications to fluid and thermal dynamics. Prerequisite: Math 131.

Mr. Joshua

Offered every other year

GRADUATE COURSES IN MATHEMATICS

For more information on the graduate courses listed below, please contact the department.

300 SET THEORY

316 FUNCTIONS OF A COMPLEX VARIABLE

318 FUNCTIONS OF A REAL VARIABLE

321 ALGEBRAIC TOPOLOGY

325 ADVANCED MODERN ALGEBRA

326 SELECTED TOPICS IN COMPLEX ANALYSIS

327 FUNCTIONAL ANALYSIS

330 MASTER'S THESIS

335 SELECTED TOPICS IN ALGEBRA

341 DIFFERENTIAL EQUATIONS

358 CATEGORY THEORY

376 REPRESENTATION THEORY OF FINITE GROUPS

381 SEMINAR IN COMPLEX VARIABLES

382 SEMINAR IN ABSTRACT ANALYSIS

Music

See Department of Visual and Performing Arts.

Philosophy

DEPARTMENT FACULTY

Gary E. Overvold, Ph.D., *chair*: contemporary continental philosophy, interdisciplinary studies, epistemology, philosophy of social science

Patrick G. Derr, Ph.D.: philosophy of science, medical ethics, history of modern European philosophy, metaphysics

Daniel C. Shartin, Ph.D.: ancient philosophy, philosophy of biology, logic, metaphysics

Christina Sommers, Ph.D.: history of ethics, history of philosophy, contemporary moral theory, philosophy of literature

Kristin B. Waters, Ph.D.: ethics, social and political philosophy, history of philosophy, women's studies

Walter E. Wright, Ph.D.: nineteenth-century philosophy, ethics, philosophy of religion, German idealism

AFFILIATE FACULTY

Gerald D. McCarthy, Ph.D.: history and philosophy of religion, ethics

UNDERGRADUATE PROGRAM

The Philosophy Department offers both a traditional major program and a variety of elective courses which can enhance the student's critical skills and intellectual breadth. Some of these can be used to fulfill Program in Liberal Studies requirements. Others are special electives designed to complement the studies of students in certain other major programs or with particular preprofessional interests (for example, 133, 149, 241).

Students who want to minor in philosophy are encouraged to take an introductory course (102 is recommended), a course in the history of philosophy (121 and 123 are recommended), and at least two advanced 200-level courses. The advanced courses should be selected to complement the student's academic major and career interests.

The requirements for a major in philosophy include one course in logic (101 or 160); two courses in the history of philosophy (121, 122, 123, or 125); one advanced course in the area of ethics (220-229, 270); one advanced course in the area of metaphysics (230-239, 263); one advanced course in the area of epistemology (240-249, 287); and the *Capstone Seminar in Philosophy* (298). In all, a minimum of eight courses in philosophy are required for the major. In addition each student majoring in philosophy is required to demonstrate competence in another academic area by either (a) completing the requirements for a double major or (b) completing a set of six related courses including at least four above the introductory level in other departments.

For students who are motivated to undertake significant independent research, the department offers a *Senior Thesis Program* (299) and a variety of *Advanced Topics in Philosophy* courses (297). Students interested in these possibilities should consult with individual members of the philosophy faculty.

Honors, high honors, or highest honors in philosophy may be conferred at graduation upon majors who, in addition to having compiled a superior record in their major studies, successfully complete a senior thesis, a written examination, and an oral thesis defense.

Students who would like more information about the courses, programs, and faculty of the Philosophy Department are invited to pick up a copy of the handbook, *A Student's Guide to Philosophy at Clark*, which is available in the department office.

THE SOCIETY FOR PHILOSOPHY AND PUBLIC AFFAIRS

The Clark University Department of Philosophy houses the New England chapter of the Society for Philosophy and Public Affairs (SPPA). This is a national organization that works to promote the application of philosophical methods and insights to the consideration of such public issues as medical ethics, criminal justice, civil disobedience, pornography and censorship, economic justice, and affirmative action. The society sponsors frequent colloquia, symposia, and conferences on public policy issues. Inquiries concerning its activities may be directed to the department.

IDEALISTIC STUDIES

The international philosophical journal *Idealistic Studies* is edited by Walter Wright with the assistance of the other faculty of the Department of Philosophy. Founded by Robert N. Beck, *Idealistic Studies* has become one of the world's leading professional journals for the discussion and analysis of themes and problems arising within the context of the idealist tradition in philosophy.

THE PHILOSOPHY CLUB

Students interested in philosophy and philosophical dialogue, whether majors in the department or not, are invited to join the Philosophy Club. This student-led organization meets regularly with invited speakers and faculty to discuss topics chosen by its members. Information on the club is available from the department.

COURSE NUMBERS AND LEVELS

100-109 Introductory courses for all students; no prerequisites.

120-129 Survey courses in the history of philosophy (at least two are required for

the major); usually no prerequisites.

130-139 Courses in applied ethics for all students; no prerequisites.

140-199 Intermediate courses in various areas of philosophy; usually one prerequisite.

200-219 Advanced courses in the major systematic and historical areas of philosophy; usually two prerequisites.

220-229 Advanced courses in systematic ethics; two prerequisites.

230-239 Advanced courses in systematic metaphysics; two prerequisites.

240-249 Advanced courses in systematic epistemology; two prerequisites.

250-279 Seminars on individual philosophers or philosophical issues; two or more prerequisites.

280-289 Special seminars which may be taken for graduate credit by students in certain other department; usually four or more prerequisites (plus permission) for undergraduates.

290-299 Advanced topics, individual research, senior thesis, capstone seminar, and other small, intensive courses in philosophy; usually four to six prerequisites.

INTRODUCTORY COURSES

101 INTRODUCTION TO LOGIC/ Lecture, Discussion

An introduction to logic as both a practical skill and a branch of philosophy. The student is introduced to the principles, methods, and philosophical foundations of logical reasoning.

Mr. Shartin

Offered every year

102 INTRODUCTION TO PHILOSOPHY/ Lecture, Discussion

An introduction to philosophy through the study of typical problems drawn from its main branches. Topics often include God's existence, the nature of morality, scepticism, freedom vs. determinism, immortality, and political theory. Readings are taken from both classic and contemporary sources.

Mr. Derr, Mr. Overvold

Offered every semester

Mr. Shartin, Mr. Wright

103 ANALYTIC REASONING/ Lecture, Discussion

Major emphasis is given to the analysis of argumentative essays (drawn from newspapers, philosophical works, legal journals, and popular magazines) on such topics as affirmative action, the problem of evil, the nature of law, scientific method, etc. We analyze the material with an eye to its cogency and persuasiveness, identifying its premises and conclusions, assumptions and implications. The course helps students to read, write, and think in a more analytical and critical manner.

Mr. Overvold, Mr. Shartin

Offered every semester

Ms. Waters

105 PERSONAL VALUES/ Lecture, Discussion

A philosophical study of some fundamental human problems: Is there a God? Why should we be moral? Should we permit or choose abortion, mercy killing, or suicide? Do communities have a right to ban pornography? Can civil disobedience, war, or terrorism be morally justified? What moral issues are at stake in truthfulness, sexual integrity, and love? The students learn some important moral theories and the methods used to reason philosophically about moral questions.

Mr. McCarthy, Ms. Sommers,

Offered every semester

Ms. Waters, Mr. Wright

INTERMEDIATE COURSES

121 HISTORY OF ANCIENT PHILOSOPHY/ Lecture, Discussion

Examines the origins of Western philosophical thought in early Greece, with special emphasis on the Pre-Socratics, Plato, and Aristotle. We consider the classical theories of man, society, and nature which were developed and which provided the background for subsequent philosophical and scientific thought.
Mr. Shartin Offered every year

122 HISTORY OF MEDIEVAL PHILOSOPHY/ Lecture, Discussion

Students study the major Jewish, Islamic, and Christian philosophers of the medieval period. Special attention is typically given to Maimonides, Averroes, Aquinas, and Ockham. Typical issues covered include the relation of faith and reason, the nature of universals, the basis of political theory.
Mr. Shartin Offered every other year

123 HISTORY OF MODERN EUROPEAN PHILOSOPHY/ Lecture, Discussion

The two great movements in modern Western thought—continental rationalism and British empiricism—will be examined from their common origin in Descartes, through their later articulations by Locke, Berkeley, Spinoza, Leibniz, and Hume, to their eventual transformation by Immanuel Kant. Particular emphasis is given to the interaction of philosophy and science and to the powerful influence exerted by the modern European thinkers upon contemporary thought.
Mr. Derr Offered every year

125 HISTORY OF CONTEMPORARY PHILOSOPHY/ Lecture, Discussion

A survey of the major trends in recent Anglo-American and continental philosophy: pragmatism, logical positivism, ordinary language philosophy, hermeneutics, critical theory, and phenomenology. Each alternative is considered as a coherent perspective on experience, with special attention given to its style and methodology. Prerequisite: one course in philosophy.
Mr. Overvold, Ms. Waters Offered every year

130 MEDICAL ETHICS/ Lecture, Discussion

An investigation of contemporary issues in medical ethics: informed consent, definitions of death, treatment termination and euthanasia, abortion, confidentiality and truth-telling, behavior modification and control, genetic testing and counseling, research on human subjects, the allocation of scarce medical resources, in-vitro fertilization, and national health policy. Not open to freshmen.
Mr. Derr Offered every year

132 SOCIAL AND POLITICAL ETHICS/ Lecture, Discussion

Typical issues include: What are the duties of officials when conscience and constituency conflict? Can political violence or "dirty tricks" be morally justified? Are moral principles of fairness and honesty relevant to political campaigning and democratic electioneering? Should morality be legislated? Should anything else be legislated?
Ms. Waters Offered every other year

133 BUSINESS ETHICS/ Lecture, Discussion

Investigates moral problems in and about the world of business: Do corporations have moral responsibilities, or is their only social responsibility to increase profits? Is capitalism morally justifiable, or is some other politico-economic system

morally preferable? Also discusses ethical issues in advertising, affirmative action and business's responsibilities toward the environment.

Mr. Shartin, Ms. Sommers

Offered every semester

134 AGING, DEATH AND SOCIETY/ Lecture, Discussion

Considers moral issues in gerontology: What does society owe to its older members? How ought we to resolve conflicts between the interests of the old and the young? What do adult children owe to their adult parents? What is aging: a disease, a maturation? Is it a bad thing? Are there really life stages? How does it feel to grow old? What is death?

Ms. Sommers

Offered every other year

136 LEGAL ETHICS/ Lecture, Discussion

Considers a variety of ethical problems that arise within and about the law and the legal system: the relation of law and morality, issues in professional ethics, the social responsibilities of lawyers and judges, questions about the nature of justice, and so forth.

Ms. Waters

Offered every other year

139 WOMEN AND PHILOSOPHY/ Lecture, Discussion

Attention is given to the prevalent images of women in the history of Western philosophical thinking, including the tradition's general misogyny and the glimmerings of feminism in Mill, Wollstonecraft, and others. The course also looks at issues in contemporary philosophy that particularly affect women, including debates about sexual differences, the meaning of liberation, and the status of feminism as a social ideal.

Ms. Waters

Offered every other year

145 EXISTENTIALISM/ Lecture, Discussion

Considers the major nineteenth- and twentieth-century existentialists, with special attention given to the questions of personal responsibility and authenticity, the meaning of death, and the death (or existence) of God. Prerequisite: one course in philosophy.

Ms. Sommers, Mr. Wright

Offered every other year

149 AESTHETICS/ Lecture, Discussion

Why did Plato condemn artists and their work? Can art really be as neatly categorized as Aristotle claims? Is art "experience," "emotion," or something else altogether—as suggested by Dewey, Croce, and Santayana? Among the theories of art that we will consider are those of Arnheim, Sartre, Langer, Fischer, Collingwood, and Nietzsche. Prerequisite: one course in philosophy.

Ms. Waters

Offered every year

150 PHILOSOPHY OF RELIGION/ Lecture, Discussion

Considers the nature of religion as revealed by the examination of representative forms of religious experience. Emphasis is given to the effect of contemporary knowledge on our understanding of religion and religious experience. Prerequisite: one course in philosophy.

Mr. McCarthy, Mr. Wright

Offered every year

154 RECENT CONTINENTAL PHILOSOPHY/ Lecture, Discussion

Introduces three contemporary European philosophical movements: hermeneutics, critical theory, and structuralism. Prerequisite: Philosophy 125 or permission of instructor.

Mr. Overvold

Offered every other year

156 PHILOSOPHY IN LITERATURE/ Lecture, Discussion

Considers philosophical issues and problems presented in selected literary texts. Topics vary with the texts, but typical issues are the nature of the self, the purposes of human life, and the nature of the human community. Prerequisite: one course in philosophy.

Mr. Overvold, Ms. Sommers

Offered every year

160 SYMBOLIC LOGIC/ Lecture, Discussion

Emphasis is on formal principles of deductive rigor with some consideration of the philosophical implications of logic. Topics include: sentential calculus, predicate calculus, Tarski's definition of truth, selected metatheorems, and Henkin's completeness proof for the first order predicate calculus.

Mr. Shartin, Mr. Wright

Offered every year

ADVANCED COURSES**212 PHILOSOPHY OF LANGUAGE/ Lecture, Discussion**

An analysis of the concepts of reference, meaning, analyticity, intentionality, intensionality, rules, and the relation of language to thought. Particular attention is given to the speech act approach (Austin, Grice, Strawson, Searle) and to the implications of language theory for the social sciences (Ricoeur, Louch). Prerequisite: two courses in philosophy.

Mr. Shartin

Offered every other year

215 KANT AND THE NINETEENTH CENTURY/ Lecture, Discussion

Examines the work of Kant and selected later philosophers (Fichte, Hegel, Schopenhauer, Nietzsche, Marx, Engels, and Comte) with a special emphasis on their influence on contemporary thought. Prerequisite: two courses in philosophy, preferably including Philosophy 123.

Mr. Wright

Offered every other year

220 THEORIES OF ETHICS/ Lecture, Discussion

Examines the principal ethical theories from the history of Western philosophy, including the answers given by philosophers such as Plato, Aristotle, St. Augustine, St. Thomas Aquinas, Hobbes, Hume, Kant, and Mill to the questions: What is "the Good?" How can it be realized in society and in one's personal life? Are our moral judgments objective? Why should we be moral? Prerequisite: two courses in philosophy.

Mr. McCarthy, Ms. Sommers, Ms. Waters

Offered every year

221 SOCIAL AND POLITICAL PHILOSOPHY/ Lecture, Discussion

Surveys the leading philosophical accounts of social and political institutions, including social contract theory, anarchism, socialism, democratic capitalism, and communism. Property, civil and natural rights, freedom and obligations, and the legitimation of political authority are treated in detail. Readings include both classical and contemporary sources. Prerequisite: two courses in philosophy.

Ms. Waters

Offered every other year

234 METAPHYSICS/ Lecture, Discussion

An advanced survey of fundamental problems in metaphysics: universals, substance, the mind/body relation, category theory, identity and individuation, and the nature of space and time. Prerequisite: two courses in philosophy.

Mr. Derr, Mr. Shartin

Offered every year

235 CONCEPTS OF SELF/ Lecture, Discussion

Considers the various philosophical concepts of the "self" that have been developed by classic and contemporary philosophers. Typical thinkers whose views may be covered include Aristotle, Plato, Descartes, Kant, Heidegger, Sartre, Kierkegaard, Strawson, and Stevenson. Prerequisite: two courses in philosophy.

Ms. Sommers, Mr. Wright

Offered every other year

240 EPISTEMOLOGY/ Lecture, Discussion

The study of the nature and sources of knowledge, with special attention to the interrelationships among belief, knowledge, evidence, proof, truth, and the problem of scepticism. Prerequisite: two courses in philosophy.

Mr. Overvold, Ms. Waters

Offered every year

241 PHILOSOPHY OF SCIENCE/ Lecture, Discussion

Examines such questions as: What is a scientific explanation? Can induction be justified? What grounds the claim that one theory is better than another? Are there such things as objective "facts?" Do scientific theories disclose the ultimate constituents of the universe? Special attention is given to the views of Hempel, Popper, Kuhn, Lakatos, Feyerabend, and Hesse. Prerequisite: four courses in natural sciences or two courses in philosophy.

Mr. Derr

Offered every year

250 PLATO/ Seminar

An advanced investigation of the major philosophical dialogues of Plato. Typical selections include *The Republic*, *Theaetetus*, *Sophist*, *Statesman*, *Parmenides*, *Euthyphro*, *Phaedrus*, and *Meno*. Prerequisites: two courses in philosophy, including 121.

Mr. Shartin

Offered every other year

251 ARISTOTLE/ Seminar

An advanced investigation of some central parts of the philosophical system of Aristotle. Among the works examined may be the *Categories*, *On Interpretation*, *Prior Analytics*, *Posterior Analytics*, *Physics*, *De Anima*, *Metaphysics*, *Nichomachean Ethics*, *Politics*, and *Poetics*. Prerequisites: two courses in philosophy, including 121.

Mr. Shartin

Offered every other year

256 KANT/ Seminar

Students are introduced to Kant's *Critique of Pure Reason* —regarded by many as the most important philosophical text of the last several hundred years. Prerequisite: two courses in philosophy, including 123.

Ms. Waters

Offered periodically

257 HEGEL/ Seminar

Hegel's *The Phenomenology of Mind* and selections from his other works. Prerequisites: at least two courses in philosophy, preferably including 123.

Mr. Wright

Offered periodically

259 HEIDEGGER AND WITTGENSTEIN/ Seminar

The seminar concentrates on two of the most influential texts of twentieth-century philosophy: Heidegger's *Being and Time* and Wittgenstein's *Philosophical Investigations*. Prerequisite: three courses in philosophy, including 125.

Mr. Overvold

Offered periodically

260 CASSIRER/ Seminar

The philosophical works of Ernst Cassirer, concentrating especially upon *The Philosophy of Symbolic Forms* and *The Logic of the Humanities*. Prerequisite: two courses in philosophy.

Mr. Kaplan

Offered every other year

263 PHILOSOPHY OF MIND/ Seminar

A critical examination of the "nature" or concept of mind. Related issues to be considered are: mind/body relationship, the identity theory of mind/brain, the thesis of dualism, and other themes that involve the philosophical examination of psychological phenomena. Prerequisite: two courses in philosophy.

Mr. Overvold, Mr. Shartin

Offered periodically

264 PHILOSOPHY OF BIOLOGY/ Seminar

Examines such issues as: the structure of evolutionary theory (including the claim, by critics, that it is circular); the role of teleology in biological science; the status of taxonomies; and the reduction of biological theories (e.g., Mendelian genetics) to physical and chemical theories (e.g., molecular biology). Prerequisites: four courses in biology or two courses in philosophy.

Mr. Shartin

Offered periodically

270 PHILOSOPHY OF LAW/ Seminar

Is law "natural," "God-given," or "an artificial contrivance of man?" What is the purpose of law? Is there a theory of law which can explain rights, duties, liability, responsibility, punishment, and so forth? Is judicial reasoning random or subservient to some set of principles? What is the connection between law and the moral concept of justice? Prerequisite: two courses in philosophy.

Ms. Waters

Offered every other year

272 CONCEPTS OF THE HUMAN BEING/ Seminar

Considers some of the answers philosophers have given to the Psalmist's question, "What is Man?" What kind of thing is a human being? What is a person? Also considers the problem of defining the moral community. Prerequisite: three courses in philosophy.

Mr. Derr, Ms. Sommers

Offered every other year

275 PHENOMENOLOGY/ Seminar

An intensive study of two representatives of contemporary phenomenology: Edmund Husserl and Maurice Merleau-Ponty. Some consideration is given to other major philosophers within the tradition and to the historical context of the phenomenological movement in general. Prerequisite: at least three courses in philosophy.

Mr. Overvold

Offered periodically

287 PHILOSOPHY OF THE SOCIAL SCIENCES/ Seminar

A critical and intensive survey of the four alternative accounts of explanation, social reality, and social science put forward by the neopositivist empiricists, the phenomenologists, the neo-Wittgensteinians, and the continental hermeneuticists and critical theorists. Prerequisite: at least four courses in philosophy or graduate status in a social science.

Mr. Overvold

Offered every other year

288 ETHICAL AND PHILOSOPHICAL ISSUES IN RISK ASSESSMENT AND HAZARDS MANAGEMENT/ Seminar

An intensive study of the conceptual and methodological problems involved in

defining and measuring risk, of some central philosophical principles of morality and distributive justice, and of the special methods by which such principles can be applied to policy problems regarding the management of complex technological hazards. Cases studied vary by year. Prerequisites: four courses in philosophy or advanced standing in a relevant physical or social science.

Mr. Derr

Offered every other year

297 ADVANCED TOPICS IN PHILOSOPHY/ Individual Projects

Offers group discussion, individual tutorials, and independent research in areas of philosophy. The independent research involves a topic of each student's choice within the designated area. Prerequisite: where appropriate, completion of regular department course(s) in the area; four courses in philosophy; and permission of instructor. Offerings vary each semester. Recent topics have included medieval Jewish philosophy, philosophical issues in logic, explanation in psychology, social welfare theory, and Aristotle's category theory.

Staff

Offered every semester

298 CAPSTONE SEMINAR IN PHILOSOPHY

This seminar is required for completion of the major in philosophy. Its theme is a central philosophical issue around which the students' previous philosophical studies can be integrated. Responsibility for the conduct and presentation of research on the theme is shared equally by the students and the department faculty. At least two members of the philosophy faculty are normally involved in the seminar. Prerequisite: at least six courses in philosophy. Coordinated enrollment in Philosophy 299 (*Senior Thesis*) is recommended but not required.

Mr. Derr, Mr. Overvold, Mr. Shartin, Ms. Sommers,
Ms. Waters, Mr. Wright

Offered every year

299 SENIOR THESIS/ Individual Project

Students undertake an advanced individual study of a selected philosophical problem. The prerequisites, all of which must be fulfilled no later than the middle of the preceding semester, are: (1) permission of the department, which is usually granted only to majors with an academic record of at least B in the major; (2) prior completion of at least six courses in philosophy; and (3) submission and approval of a thesis proposal. The thesis proposal must describe the nature and scope of the proposed project, provide a bibliography of the principal sources the student expects to use, include a schedule for submission of first and final drafts to the adviser and department, and be signed by the student's thesis adviser. Upon completion of the thesis, the department faculty schedules a written examination and an oral defense for the student. Variable credit. Typically one semester.

Staff

Offered every semester

Physics

DEPARTMENT FACULTY

Roger P. Kohin, Ph.D., *chair*: experimental condensed matter physics

Roy S. Andersen, Ph.D.: electron spin resonance, radiation damage

John Davies, Ph.D.: theoretical plasma physics

Robert L. Goble, Ph.D.: technology assessment, atmospheric physics and turbulence

Harvey Gould, Ph.D.: theoretical condensed matter physics
Christoph Hohenemser, Ph.D.: experimental condensed matter physics, technology assessment
Christopher P. Landee, Ph.D.: experimental condensed matter physics, magnetochemistry
Per Lidbjörk, Ph.D.: experimental condensed matter physics
David G. Stork, Ph.D.: visual psychophysics, neural modeling, optical computing
Laszlo Takács, Ph.D.: experimental condensed matter physics

AFFILIATE FACULTY

Michael Klein, Ph.D.
Edward L. O'Neill, Ph.D.
Van Blumel, Ph.D.
George Phillies, Ph.D.

UNDERGRADUATE PROGRAM

Physics is the study of the material world. Physicists seek to discover and apply the universal principles which underlie a broad range of physical phenomena. The guiding rule for the physicist is simplicity since the physicist knows from experience that the most successful ideas are those which have the simplest structure and the widest range of applicability. Some systems, such as an atom or nucleus, have been found to be intrinsically simple since their behavior can be described and understood in terms of a small number of physical variables. Other systems, such as a smoke ring, might require the enumeration of a large number of variables for their description. Nevertheless, for these systems, the physicist tries to devise simple, idealized models which make analysis tractable yet preserve the essential properties of each system.

The department offers a variety of courses which reflect the diverse subject matter and applications of physics. Many courses are introductory in nature and are appropriate for undergraduates with little or no prior experience with physics or university-level mathematics. The introductory courses can be grouped as follows:

(1) *Scientific Perspective Courses.* Physics 100, 104, 106, 130 and Astronomy 1 are suitable for students with no college mathematics background and have no prerequisites. They satisfy the *scientific perspective* requirement of the Program of Liberal Studies. These courses emphasize the historical, philosophical and aesthetic dimensions of physics and are designed to impart a degree of literacy in physics. Additional courses, Physics 110, 111, 112 and 115, also satisfy the *scientific perspective* requirement but are intended for prospective science majors.

(2) *Introductory Laboratory Courses.* The department offers undergraduates a variety of laboratory courses with few or no prerequisites. Included are Physics 115, 117, 118, 119, and 132. They are concerned with computer simulation, microcomputers, optics, electronics, and alternative energy studies respectively; and they are taught independently of any lecture course. Typically they involve two discussion periods and one laboratory period per week. These courses fulfill the physics laboratory requirement for premedical/predental students.

(3) *Introductory Physics Courses.* Prospective science majors are strongly encouraged to study physics during their freshman or sophomore years since the understanding of the natural sciences requires a knowledge of the basic principles of physics. The department offers two distinct sequences of introductory courses. Physics 110 and 111 form a two-semester, noncalculus based survey of physics appropriate for the majority of science majors, ETS majors, and premedical students. Physics 110, 112 and 113 form a three-semester survey of physics recommended for physics majors, as well as chemistry and mathematics majors. The

110, 112, 113 sequence covers mechanics, electricity and magnetism, quantum physics and relativity in more depth than the 110, 111 sequence, thereby giving better preparation for advanced work. Physics 112 treats many of the topics covered in Physics 111, although in greater depth. Since Physics 112 is less comprehensive, it should be followed in sequence by Physics 113.

Students desiring further information about physics offerings beyond the catalog descriptions are invited to contact the course instructors or the undergraduate physics adviser. In addition to the courses listed above, the department offers upper-level and graduate courses.

THE MAJOR

Prospective physics majors are urged to enroll in Physics 110 and 112 in their freshman year and to consult the undergraduate physics adviser about their individual program of study. Minimum requirements for graduation with a degree in physics are fourteen courses of a common curriculum and four additional approved courses in physics or related areas. The common curriculum is taken by all physics majors and encompasses in-depth studies of mechanics, electricity and magnetism, and quantum and thermal physics. The common curriculum includes 10 courses in physics and 4 courses in calculus.

To provide intellectual breadth in physics beyond the foundations of knowledge learned in the common curriculum, majors must also complete an individual program of four additional semesters in physics or related areas. Each individual program should be chosen in consultation with the undergraduate physics adviser. All majors are encouraged to design a program which suits their particular needs and interests. Several possible examples of individual programs might be classified as follows:

General Physics—a program appropriate for students who wish to major in physics as part of a liberal arts education but who do not intend to pursue graduate study or a career of research in physics.

Preprofessional Physics—a program of advanced courses in physics, chemistry and mathematics to prepare the student for graduate study in physics or research in industry.

Biological Physics—a program including chemistry and biology courses which could be used as preparation for entrance to medical or dental schools or for careers in the biomedical professions.

Technology Assessment—a program of interdisciplinary courses to enable students to make physical, economic and value assessments of technological systems. Courses in the common curriculum include:

	UNITS
(1) <i>Introductory physics</i> : Physics 110 and Physics 111 or 112 (112 is recommended)	2
(2) <i>Intermediate-level Physics</i> : Physics 113 and 123	2
(3) <i>Calculus</i> : Mathematics 120, 121, 130, and 131	4
(4) <i>Laboratory courses</i> : Physics 114 and 119	2
(5) <i>Upper-level courses</i> : Physics 161, 174, and Physics 176, or equivalent	3
(6) <i>Senior project</i> : Physics 231, or equivalent	1
TOTAL IN COMMON CURRICULUM	14
(7) <i>Additional approved electives</i>	4
TOTAL IN MAJOR PROGRAM	18

Students with strong backgrounds in physics and mathematics may replace required courses with appropriate advanced courses, as approved by the departmental undergraduate adviser. Students with advanced placement credits may count them towards their major requirements. It is possible to complete all requirements for the major within three years, so that it is not essential to begin the study of physics in the freshman year. The Physics Department offers *Introductory Physics*, 110 and 111, every semester, so that students can begin studies at any time. All majors are expected to confer with the undergraduate adviser in the middle of each semester, prior to preregistration, to plan courses for the following semester and to ensure that all requirements for graduation are being satisfied.

Information about career opportunities after graduation, as well as further information about courses and major requirements can be found in the booklet *Physics at Clark*, published by the department. Copies can be obtained in the department office or from the undergraduate adviser.

THE CAPSTONE EXPERIENCE

An independent research project is the most appropriate capstone experience for physics majors. The required capstone course is normally one semester of Physics 231, *Special Projects in Physics I*, or an approved course of comparable scope. Near the end of the junior year, the major should arrange a topic for his or her senior project in consultation with department faculty members. Work is conducted under the guidance of a faculty member, often with the assistance of graduate students engaged in research. It is the intention of the faculty to design projects that lead to publication in refereed physics journals. Majors with a special interest in research, particularly preprofessional majors, are urged to enroll in more than one semester of Physics 231-233. Research opportunities in the department are listed in the university publication *Undergraduate Research Opportunities*, and in the departmental booklet *Physics at Clark*.

HONORS

Students can apply for departmental honors in recognition of meritorious academic standards and research creativity. An honors candidate must maintain an overall B- average. All eligible majors are encouraged to participate in the honors program.

Honors candidates are expected to conduct a research project under guidance of a faculty member during the junior or senior years. A thesis describing the work must be submitted to the faculty no later than April 1 of the senior year and defended orally in a special departmental convocation about two weeks later. Recommendation for honors in physics is made on the basis of the quality of the thesis and student performance in the defense. Students may gain credit for thesis research by registering for Physics 231, 232 and 233. Interested majors are urged to consult with faculty members early in order to choose an appropriate research topic.

GRADUATE PROGRAM

The department offers the master of arts and doctor of philosophy degrees in physics. Departmental research is concentrated in experimental and theoretical studies of condensed matter including magnetic critical phenomena, magnetic and optical properties of solids, defects in solids, and cluster-aggregation problems. Other research areas include radiation damage studies on biological materials, vision, neural modeling, optical computing, pattern recognition, theoretical plasma physics, and interdisciplinary studies of risk assessment and energy technology.

The academic requirements of the graduate program are flexible, with emphasis on early student participation in research and informal student evaluation.

A distinctive part of each student's course work is Physics 303, a "research apprenticeship" course, which introduces the student to research in several different research groups at the earliest possible time.

Beginning graduate students must take a placement examination, which tests their knowledge of undergraduate physics. Students failing this examination may be required to take remedial courses before entering fully into the graduate program, and they may be asked to fulfill the requirements of the M.A. before proceeding to the Ph.D.

To receive the M.A. degree, students must satisfy the general university residence and course requirements, pass with a grade of B- or better, four units of the basic graduate courses (Physics 301, 302, 305, 306, 309 and 310), one unit of Physics 303, and pass two oral examinations in the subject matter of the basic graduate courses. In contrast to M.A. physics programs at many other universities, M.A. candidates must also complete a thesis based on original research.

To receive the Ph.D., students must, in addition to fulfilling university residence and course requirements, pass with a grade of B or better the basic graduate courses Physics 301, 302, 305, 306, 309 and 310 and two units of Physics 303. The department does not rely on a formal written qualifying examination to evaluate student readiness for Ph.D. research. Students must pass four oral examinations that stress qualitative as well as quantitative aspects of the subject matter of the basic graduate courses, preferably before beginning dissertation research. Students must also pass at least one graduate course in a subject other than physics, demonstrate literacy in a foreign language and computer programming, and complete a dissertation based on original research. Students entering with advanced standing and transferable credit are encouraged to demonstrate proficiency in the basic graduate courses through oral examinations.

Graduate students in both the M.A. and Ph.D. programs are required to obtain supervised teaching experience either as teaching assistants or teaching fellows in the department, or elsewhere if approved by the department.

Further information on research interests of the faculty and research opportunities for graduate students can be found in the departmental brochure *Graduate Study and Research in Physics at Clark*. Copies are available upon request from the graduate student adviser.

Application forms for admission and financial aid may be requested from the chair of the department. During the academic year, financial support is available in the form of tuition remissions, teaching assistantships and research assistantships. The department considers the financial support of its graduate students an important responsibility.

COURSES

One course in Astronomy is offered by the department:

1 EXPLORING THE UNIVERSE

This course is explicitly designed for the nonscience major who wishes to learn about the stars. It is intended to provide for the interests of the student who seeks an acquaintance with the concepts and methods of science but who does not wish to go into the depth of the typical introductory science survey course. Topics considered are interdisciplinary in character since astronomy involves physics, chemistry, biology, and geology. The use of mathematics is minimized; only simple algebra is utilized. Half of the course is devoted to consideration of the planets and the sun. In the other half of the course, the stars, their life cycles, and the galaxies are studied. Theories of the composition and origin of the solar system, of the universe, and of life are explored. The heavens are best understood by having students make direct observations of celestial objects. Emphasis is on the moon, sun, planets, meteors, stars, variable stars, nebulae, and galaxies. Students

make these observations using telescopes in the university observatory as well as on night field trips. This course satisfies the *scientific perspective* requirement in the Program of Liberal Studies.

Mr. Andersen, Mr. Davies

Offered every fall

100 EINSTEIN AND HIS IDEAS

Introduces students with no special preparation or competence in mathematics and science to the contributions of Einstein to contemporary physics. Much of the course is devoted to a systematic development of Einstein's special theory of relativity in which the effects of gravity are described in terms of the curvature of space, Einstein's role in the development of quantum mechanics, and his involvement in political and humanitarian causes. Throughout the course we seek to gain insight into Einstein as a person and into the nature of the creative process. This course satisfies either the formal analysis or the *scientific perspective* requirement in the Program of Liberal Studies.

Mr. Gould

Offered every other year

104 THE NATURE OF PHYSICAL SCIENCE

Examines two fundamental and important questions: "What is natural science?" and "How do natural scientists view the natural world?" Answers to these questions are sought using a case studies approach involving one of the great revolutions in physics: Copernicus and the solar system, Bohr and the structure of the atom, or Maxwell and electromagnetic radiation are typical examples. About two-thirds of the course involves a historical study of the underlying scientific discoveries which led to the formulation of the new theory. Such a study allows the student to understand the complexity of the questions scientists must consider in evaluating and explaining observational data. The remaining third of the course considers contemporary philosophical ideas on the nature of science. The course is open to all students, involves no mathematics, and has no prerequisites. It satisfies the *scientific perspective* requirement of the Program of Liberal Studies.

Mr. Andersen

Offered periodically

106 LIGHT, COLOR AND VISION

This course will cover a great variety of optical and visual phenomena selected from the following: the nature of light, its speed, light sources, shadows, eclipses, pinhole cameras, mirrors, kaleidoscopes, optical effects in the atmosphere (mirages, rainbows, halos, glories,...), fiber optics, optical properties of gems (diamonds, opals,...), lenses and the images they produce, anamorphic art, cameras (focusing, types of lenses, shutters, apertures, perspective,...), photographic film and development, the eye (afterimages, eye movements, stroboscopes, optical illusions,...), simple optical instruments (eyeglasses, contact lenses, microscopes, telescopes, schlieren photography,...), binocular vision and the perception of depth (stereoscopes, 3-D postcards, distorted architecture,...), color in nature and art (methods of color mixing, pigments, paints, printers' inks, half-tone pictures,...), human color perception (complementary colors, color illusions, color deficiency, contingent aftereffects,...), color photography (additive and subtractive methods, instant color photography, false color, Kirlian photography,...), the wave nature of light (coherence, interference, resolving power, moiré patterns,...), polarized light and sunglasses, liquid crystal displays, optical activity, holography (transmission, reflection, and white light holograms, holographic movies,...), light in modern physics (spectra, lasers, relativity, black holes). Hundreds of color slides of natural, man made, and artistic phenomena will be shown in lecture, and students will perform several experiments in lab. The course satisfies the *scientific perspective* requirement and is

designed primarily for students outside the physical sciences. There are no prerequisites, and math will be used only as needed.

Mr. Stork

Offered every spring

110 INTRODUCTORY PHYSICS - PART I

This is an introductory-level, problem-oriented course for science majors and the general student desiring a survey of physics. The course stresses the simplicity and self-consistency of physical models in explaining a variety of physical phenomena. Topics discussed include Newtonian mechanics, wave motion, and an introduction to the thermal properties of matter. Calculus is not required although elements of calculus will be introduced during the course. The course may be followed by either Physics 111 or 112, depending on the particular goals of the student. Together with Physics 111 and a laboratory course it fulfills the usual entrance requirements for medical and dental schools. The course satisfies the *scientific perspective* requirement of the Program of Liberal Studies. There are three lectures and one discussion section per week.

Mr. Andersen, Mr. Davies,

Offered every semester

Mr. Kohin, Mr. Landee, Mr. Stork

111 INTRODUCTORY PHYSICS - PART II

A continuation of Physics 110. Includes electricity, magnetism, optics, relativity, atomic and nuclear physics. Students who do not intend to take a second year of physics should enroll in this course in preference to Physics 112. It has three lectures and one discussion section each week.

Mr. Andersen, Mr. Davies,

Offered every semester

Mr. Kohin, Mr. Landee, Mr. Stork

112 CLASSICAL PHYSICS

This course is a continuation of Physics 110 for students desiring a more complete introduction to physics. Topics, which include electricity, magnetism, light and optics, are explored in greater depth than in Physics 111. Physics 112 is the recommended second-semester course for physics, mathematics and other science majors who intend to continue with *Quantum Physics*, Physics 113. Three lectures and one tutorial session per week. Credit is not given for both Physics 111 and 112. The course requires permission of the instructor for entry. Corequisite: Mathematics 121, or 125.

Mr. Stork

Offered every spring

113 QUANTUM PHYSICS

Quantum Physics is the third semester of a three-semester survey of physics and is normally intended to follow Physics 112. Topics covered include quantization of physical variables such as charge, mass, energy and angular momentum; the wave and particle duality of radiation and matter; and the Bohr theory of the hydrogen atom. The description of a system in terms of its wave function is introduced, and it is shown how measurements of properties of the system correspond to mathematical operations on the wave function. Physics 113 also covers relativity physics, which is needed to help understand phenomena on an atomic scale. Three lectures and one tutorial meeting per week. Prerequisite: Physics 112 or permission of the instructor.

Mr. Hohenemser

Offered every fall

114 QUANTUM PHYSICS LABORATORY

This course offers laboratory experience with simple systems exhibiting quantum and relativistic phenomena and serves as an introduction to research level nuclear

science instrumentation. Experiments include x-ray activation analysis, mass-spectroscopy with relativistic electrons, lifetime measurements of cosmic ray muons, gamma-gamma coincidence measurements, positron annihilation, and Compton and Rutherford scattering. Two discussion classes, one recitation and about five hours of self-scheduled laboratory work per week. Prerequisite: Physics 113 and 119.

Mr. Hohenemser

Offered every spring

115 COMPUTER SIMULATION LABORATORY

This course introduces students to the essential features of computer simulation and its diverse applications. The course is project-oriented, with students proceeding at their own pace depending on background and interests. Projects involve the simulation of dynamical systems such as the harmonic oscillator and the two-body problem, and simple random systems. Methods include the numerical solution of simple differential equations and Monte Carlo techniques. No background in computer programming is necessary. It is recommended that prospective physics majors complete this course early in their career so that they can use the computer more effectively in their advanced courses. Two lecture discussions and one scheduled laboratory per week. This course satisfies the *scientific perspective* requirement of the Program of Liberal Studies. Prerequisites: Physics 110, Mathematics 120, or permission of the instructor.

Mr. Gould

Offered every year except for 1986-87

117 MICROCOMPUTER LABORATORY

This laboratory course provides the background and skills necessary to interface microcomputers with measurement and control processes. In the lectures the student will learn about the internal architecture of the microcomputer and the principles of interfacing the computer to physical apparatus. In the laboratories students will gain practical experience in the fundamentals of digital electronic circuits and interfacing techniques and conduct projects to employ the microcomputer in several specific measurement and control applications. No background in electronics or computer programming is necessary. Two lectures and one laboratory meeting per week.

Mr. Andersen

Offered every other year

118 OPTICAL PROJECTS LABORATORY

This introductory laboratory covers the principles, applications, and techniques of modern optics. Projects treat imaging and photographic techniques, basic optical instruments including the microscope, lasers and holograms, optical communication using fiber optics, and interaction of light with matter. This course is of interest to biology, geography, and psychology majors, as well as to physics and chemistry majors. It satisfies the physics laboratory requirement for premedical and pre dental students. Two tutorial sessions and one laboratory per week. Prerequisite: one course in physics.

Mr. Kohin

Offered every year

119 ELECTRONICS LABORATORY

This is an introductory laboratory course designed to teach the principles of modern electrical measurement and control. Basic skills such as the fundamentals of DC and AC circuit theory and use of test instruments such as multimeters and the oscilloscope are taught. Emphasis is given to operational amplifiers and digital circuits. The course satisfies the physics laboratory requirement for premedical/pre dental students. Two lectures and one laboratory each week. No prerequisites other than high school algebra.

Mr. Landee

Offered every year

123 STATISTICAL AND THERMAL PHYSICS

This course introduces the concepts and techniques of statistical and thermal physics including statistical mechanics, thermodynamics and kinetic theory. The overall goal of the course is to understand the behavior of macroscopic systems in terms of their basis in atomic theory. Topics treated include entropy and the second law of thermodynamics, the Boltzmann probability distribution, the thermodynamics of an ideal gas and of an ideal paramagnet, heat and work, and first and second law efficiencies of simple engines. Prerequisites: Physics 113; corequisite: Mathematics 131.

Mr. Gould, Mr. Kohin

Offered every year

130 ENERGY SOURCES AND SYSTEMS

An introduction to the subject of energy for ETS majors and others interested in the utilization of fossil fuels, solar and wind power, geothermal energy, and nuclear fission and fusion. Emphasis is placed on basic concepts, thermodynamic principles, efficiency in use, and methods of converting both energy and energy resources from one form to another. The course provides the necessary background for those planning more detailed study of energy technology and/or policy and also satisfies the prerequisite for ETS 132, *Alternative Energy Systems Laboratory*.

Mr. Davies

Offered every other year

132 ALTERNATIVE ENERGY LABORATORY

Designed to complement and augment ETS 130. The subject matter is approached by first developing the concepts of temperature, heat, and energy and then applying these ideas to alternative energy devices. Laboratory experiments include measurement of the performance of solar collectors, photovoltaic cells, and wind machines. Corequisite: Physics 111 or 112 or prerequisite: ETS 130. Two lectures and one laboratory per week.

Mr. Davies

Offered every year

161 THEORETICAL PHYSICS I

Physics 161 and 162 constitute an introduction to the concepts of classical theoretical physics. Topics considered in Physics 161 include particle and rigid body mechanics, and the development of electro- and magnetostatics. Useful mathematical methods are introduced and applied. Prerequisites: Mathematics 131 and Physics 111 or 112.

Mr. Davies, Mr. Kohin

Offered every year

162 THEORETICAL PHYSICS II

This course is a continuation of Physics 161. Topics covered include the development of electrodynamics through Maxwell's equations and relativity. Useful mathematical methods are developed. Prerequisite: Physics 161.

Mr. Kohin, Mr. Lidbjörk

Offered every year

174 ATOMIC AND NUCLEAR PHYSICS

This intermediate level course provides an introduction to quantum mechanics. Basic principles are introduced, and the theory is applied to the study of atoms, nuclei, molecules and solids. Prerequisites: Physics 113 and Mathematics 131.

Mr. Goble, Mr. Landee

Offered every year

176 CONDENSED MATTER LABORATORY

This course offers an introduction to the study of solids while providing laboratory experience in the methods used to analyze the structural, thermal,

transport, electronic and magnetic properties of condensed matter systems. Experimental techniques include x-ray diffraction, resistivity and specific heat, electrical and magnetic susceptibility, ultrasound propagation and attenuation, nuclear magnetic and electron spin resonance, Mössbauer effect, and, on an optional basis, electron microscopy. The experiments provide a broad introduction to research level materials science instrumentation. Two discussion classes, one recitation, and about five hours of self-scheduled laboratory per week. Prerequisites: Physics 113, 114 and 123.

Staff

Offered on demand

201 CLASSICAL DYNAMICS

This course is designed to prepare the physics major for graduate work in physics. Topics covered include Hamilton's principle, classical scattering theory, rigid body motion, canonical transformations, Hamilton-Jacobi theory, and mathematical methods of physics. Prerequisite: Physics 161 and 162.

Mr. Davies

Offered every year

202 ELECTRODYNAMICS

This course is designed to prepare the physics major for graduate study in physics. Topics covered include boundary-value problems in electrostatics and magnetostatics, the electromagnetic field equations and special relativity, electromagnetic waves, radiation theory, multipole fields, and mathematical methods of physics. Prerequisite: Physics 162.

Mr. Davies

Offered every year

205 QUANTUM MECHANICS - PART I

Physics 205 and 206 constitute a comprehensive introduction to the concepts of quantum mechanics and their application in physics and chemistry. The goal of this year course is to prepare students for graduate work. The lectures are the same as in Physics 305, but assignments and evaluation are separate. Prerequisites: Physics 174 and Mathematics 131.

Mr. O'Neill

Offered every year

206 QUANTUM MECHANICS - PART II

Physics 206 is a continuation of Physics 205. Prerequisite: Physics 205.

Mr. O'Neill

Offered every year

209 STATISTICAL MECHANICS

This course is designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 309, but evaluation is separate. Prerequisites: Physics 123 and 174.

Mr. Gould, Mr. Phillis

Offered every other year

214 PHYSICAL INSTRUMENTATION LABORATORY

An introduction to modern physical research instrumentation. The course deals with the advanced interpretation of physical measurements in modern physics and is the same as Physics 114, except that interpretation of experiments is at the advanced undergraduate or beginning graduate level. Undergraduates who have completed 114 may register for 214.

Mr. Hohenemser

Offered every year

215 ADVANCED COMPUTER SIMULATION LABORATORY

This course is similar in nature to Physics 115 but treats topics at a more advanced level. The course is suitable for graduate students in the sciences or

undergraduates who have completed Physics 115. Prerequisite: Physics 115 or permission of the instructor.

Mr. Gould

Offered periodically

219 ADVANCED ELECTRONICS LABORATORY

This course is similar to Physics 119 but treats topics at a more advanced level. The course is suitable for graduate students in the sciences or undergraduates who have completed Physics 119. Prerequisite: Physics 119 or permission of the instructor.

Mr. Landee

Offered every year

230 DIRECTED READINGS IN PHYSICS

These directed readings in physics will provide for special needs not covered in regular courses. Offered by arrangement and for variable credit.

Staff

Offered every semester

231 SPECIAL PROJECTS IN PHYSICS I

This is an independent research project in experimental, theoretical or applied physics, done under guidance of a faculty adviser. It is normally taken in the senior year to fulfill the senior project requirement. Students may enroll more than once in Physics 231 if they begin a new project under a different faculty adviser. Students in continuing projects should enroll in Physics 232 and 233. Offered for variable credit. By permission of the faculty adviser.

Staff

Offered every semester

232 SPECIAL PROJECTS IN PHYSICS II

This course is the second-semester continuation of Physics 231 for students engaged in an ongoing research project under the same faculty adviser. Offered for variable credit. Prerequisites: Physics 231 and permission of the adviser.

Staff

Offered every semester

233 SPECIAL PROJECTS IN PHYSICS III

This course is the third-semester continuation of Physics 231 and 232 for students engaged in an ongoing research project. Offered for variable credit. Prerequisites: Physics 232 and permission of the adviser.

Staff

Offered every semester

240 TOPICS IN BIOLOGICAL PHYSICS

This is a lecture course specifically designed for the senior physics major in the biological physics program. The principles of biology, chemistry and physics are applied to a variety of biological phenomena.

Mr. Andersen

Offered periodically

250 SENIOR SEMINAR

This capstone covers a selection of topics of current interest in physics. Offered for variable credit.

Staff

Offered periodically

301 CLASSICAL DYNAMICS

A graduate-level course in classical mechanics. The topics covered are similar to Physics 201 but are treated in greater depth.

Mr. Davies

302 CLASSICAL ELECTRODYNAMICS

A graduate-level course in classical electromagnetic theory. The topics covered are similar to Physics 202 but are treated in greater depth.

Mr. Davies

303 RESEARCH APPRENTICESHIP

An apprentice has direct participation in the experimental and theoretical research groups of the department. The student spends seven to fourteen weeks working in one or more research groups. Ph.D. students should enroll in the course for two semesters; M.A. students for one semester.

Staff

305 QUANTUM MECHANICS - PART I

Physics 305 and 306 constitute a comprehensive introduction to the concepts of quantum mechanics and their application in physics and chemistry. Topics treated in Physics 305 include the foundations of quantum mechanics, symmetries and angular momentum, particle in a central potential, electron spin, and perturbation theory.

Mr. O'Neill

306 QUANTUM MECHANICS - PART II

Physics 306 is a continuation of Physics 305. Topics discussed include scattering theory, interaction of radiation with matter, second quantization, applications to simple atoms and molecules, and an introduction to many-body theory.

Mr. O'Neill

309 STATISTICAL MECHANICS

This is a comprehensive course in statistical mechanics with applications to physical and chemical systems. Topics discussed include ensemble theory, the statistical basis of thermodynamics, quantum statistics, the cluster expansion for a classical gas, ideal Bose and Fermi systems, applications of the renormalization group to the Ising model and linear polymers, and fluctuation theory.

Mr. Gould, Mr. Phillies

310 SOLID STATE PHYSICS

This course surveys the most important experimental properties of solids and introduces students to the quantum theory of solids. Topics include crystal and reciprocal lattice structures; the free electron theory of metals; electronic band structure and the Fermi surface; lattice vibrations; and the elementary excitations of solids. Prerequisite: Physics 305, or permission of instructor.

Mr. Landee

315 ADVANCED QUANTUM MECHANICS

This course covers relativistic quantum mechanics, quantum electrodynamics, many-body theory, and other advanced topics. Prerequisite: Physics 306 or equivalent.

Staff

317 SOLID STATE SPECTROSCOPY

A theoretical and experimental review of the physics of solids observed using spectroscopic methods.

Staff

319 ADVANCED STATISTICAL MECHANICS

This course treats the statistical mechanics of interacting systems including the

theory of critical phenomena and kinetic theory. Other advanced topics of current research interest will also be discussed. Prerequisite: Physics 309.
Mr. Gould

320 ADVANCED SEMINAR IN PHYSICS

This course provides for special coverage of topics in physics of current research interest. Offered for variable credit.
Staff

325 RESEARCH SEMINAR

A student participation seminar in current research problems. Offered for variable credit.
Staff

330 SELF-ORGANIZATION, COLLECTIVE PHENOMENA, AND ASSOCIATIVE MEMORY

This course investigates topics in the statics and dynamics of large collections of interconnected nonlinear elements from physics, chemistry, and neurobiology, with a special emphasis on neural systems and content-addressable (auto-associative) memory, hetero-associative memory and the visual processing of the retina, lateral geniculate nucleus, and visual cortex. Approaches such as simulated annealing (via Boltzmann machines), the Master, the Chapman-Kolmogorov, the Langevin, and the Fokker-Planck equations will be used to study phase transitions, attractors, critical points, limit cycles, pattern generation and recognition, adaptive filters, and feature maps. Students will be required to complete projects (generally done with a computer) illustrating or extending the material covered in seminar. Prerequisites: *Statistical Mechanics* (Physics 209) and knowledge of at least one high-level computer language or permission of instructor.

Mr. Stork

340 COLLOQUIUM

Weekly invited lecturers speak on research topics of current interest. Required for all graduate students. Not offered for credit.
Staff

350 RESEARCH

Thesis and dissertation preparation. Offered for variable credit.
Staff

Psychology

DEPARTMENT FACULTY

James D. Laird, Ph.D., *chair*: emotional experience, self-attribution, attributions to others, structures of person awareness, world hypotheses as personality variables

Sandra T. Azar, Ph.D.: high risk families, parenting, child abuse, and developmental skills underlying self-control

Robert W. Baker, Ph.D.: personality theory, abnormal behavior, clinical methods; prediction, measurement, and facilitation of student adjustment to college

Roger Bibace, Ph.D.: holistic developmental approaches to lifecycle, behavioral sciences and family medicine, doctor/patient relationships, psychoanalysis

Leonard Cirillo, Ph.D.: development of symbolic behavior, psychotherapies

William Damon, Ph.D.: social cognition, developmental psychopathology, moral development, peer interaction and developmental growth

Tamara Dembo, Ph.D.: social-emotional relationships with special consideration of the problems of deprived and disabled people, social psychology of rehabilitation

Joseph H. deRivera, Ph.D.: phenomenological psychology, affective experience, particularly the explication of structure and function of different emotions, the relationships between emotion and action in field-theory, the role of social psychology in the prevention of nuclear war

Rachel Joffe Falmagne, Ph.D.: logical cognition, logico-semantic development

Bernard Kaplan, Ph.D.: developmental orientation to, and analysis of, psychological activities and operations; perception, language, group formation

Donald G. Stein, Ph.D.: recovery of function after brain damage, biological bases of learning and memory, psychobiology of aging

David A. Stevens, Ph.D.: taste and smell, psychophysics, discrimination learning

Nicholas S. Thompson, Ph.D.: social behavior and communication of crows, bluejays, and mimic thrushes; evolutionary theory and behavior

Ina C. Uzgis, Ph.D.: cognitive development, infant development, mother-infant interaction, communication development, changes in understanding of object concept and spatial relations

Seymour Wapner, Ph.D.: *chair*, Executive Committee, Heinz Werner Institute; developmental analysis of person-in-environment relationships, perception, perceptual and cognitive development

Morton Wiener, Ph.D.: verbal and non-verbal communication and non-verbal behaviors, the learning of behaviors labelled schizophrenic, of behaviors labeled depressive, and other psychopathological behaviors.

Marianne Wiser, Ph.D.: visual perception, cognitive development, especially concept acquisition

ADJUNCT FACULTY

Jessica Jenner, Ph.D.
 Victoria A. McGillin, Ph.D.
 David Zern, Ph.D.

AFFILIATED FACULTY

Marilyn Albert, Ph.D.
 Martin Albert, Ph.D.
 Michael Alexander, Ph.D.
 David Bachman, M.D.
 David Bear, M.D.
 Michael Biber, Ph.D.
 Hiram Brownell, Ph.D.
 Robert A. Ciotto, Ph.D.
 Deborah Fein, Ph.D.
 David Finkel, Ph.D.
 Harold Goodglass, Ph.D.
 Nancy Helm-Estabrook, Ph.D.
 Jane Holmes, Ph.D.
 Davis Howes, Ph.D.
 Edith F. Kaplan, Ph.D.
 Deborah S. Kellett, Ph.D.
 Francesca LaVecchio, Ph.D.
 Jacqueline Liederman, Ph.D.
 Raymond Maciewicz, M.D., Ph.D.
 Margaret Naeser, Ph.D.

Loraine Obler, Ph.D.
Marlene Oscar-Berman, Ph.D.
Lawrence Peterson, Ph.D.
Lawrence Seidman, M.D.

RESEARCH AND CLINICAL ASSOCIATES

Jonathon Demick, Ph.D.
Maria Fafouti-Milenkovic, Ph.D.
Gail Hornstein, Ph.D.
Ogretta V. McNeil, Ph.D.
Mark Quirk, Ed.D.
Mary Walsh, Ph.D.
Mary Watkins, Ph.D.
Craig Wiener, Ph.D.

UNDERGRADUATE PROGRAM

The department has emphasized, in undergraduate courses and research, the same respect for scholarship as it has at the graduate level. The aims of the undergraduate program are: to promote respect for intellectual activity, to encourage an attitude of intelligent inquiry, and to highlight the implications of psychological knowledge for an understanding of everyday phenomena. The department offers educational experiences that will enhance the students' liberal arts background and prepare them for graduate work in psychology or related disciplines.

COURSE NUMBERS: Ranges of course numbers have specific meanings according to the following key:

<i>Range</i>	<i>Meaning</i>
100-109	Courses all majors must take (general; quantitative methods)
110-149	Survey courses, psychology as a life science
150-189	Survey courses, psychology as a social science
190-199	Special freshman and sophomore courses
200-214	Laboratory courses
215-229	Research courses
230-234	More advanced courses, psychology as a life science
235-239	More advanced courses, psychology as a social science
240-259	Primarily junior and senior specialized seminars (may not be taken for graduate credit without special permission)
260-289	Primarily junior, senior, and graduate specialized seminars (may be taken for graduate credit without special permission)
290-299	Special courses (honors, directed readings, research)

Unless otherwise stated, Psychology 101 is a prerequisite to all other psychology courses.

Major Requirements. The major in psychology consists of psychology and related course requirements. The psychology requirements are designed to ensure exposure to one of the most basic distinctions in contemporary psychology, that of psychology approached as a life or a social science; to ensure some familiarity with experimental and observational methods (laboratory and practicum requirement); to provide background in essential quantitative skills (statistics requirement—Psychology 105), and to guarantee several contacts with faculty in advanced, small-enrollment seminars.

The related requirement of two clusters of related courses reflects the conviction of the department that all academic areas are actually or potentially related to psychology, but also that scholarship involves, at some point, studying subject matter in considerable depth.

1. Psychology Courses

Total of at least eight full-course equivalents, including:

- a. 101, *General Psychology*
- b. 105, *Quantitative Methods*
- c. One full-course equivalent from range 110-149 or 230-234 (survey courses: psychology as a life science)
- d. One full-course equivalent from range 150-189 or 235-239 (survey courses: psychology as a social science)
- e. Two full-course equivalents from range 200-229 (laboratory and research courses)
- f. Two full-course equivalents from range 240-289 (upper-level seminars)

2. Clusters of Related Courses

A cluster of related courses is defined as at least four full-course equivalents in a single area or department. Two clusters must be chosen from the following areas or departments:

Biology

Chemistry

Classics

Comparative Literature

Engineering, Applied Math, or Computer Science

Economics

Education

English

Environment, Technology and Society

Foreign Languages and Literatures

Geography

Government and International Relations

History

International Development

Management

Mathematics

Philosophy

Physics

Sociology

Visual and Performing Arts

Women's Studies

There are two restrictions on permissible course sequences within an area or department:

- a. In the case where a department offers more than one introductory course, only the course or courses designed to prepare students for further work in the area may be taken for related credit. In most departments, this excludes introductory courses designed for nonmajors. Detailed information about this restriction may be obtained from the Department of Psychology.
- b. The courses must form a coherent sequence or program within the context of the department in which a cluster is taken. In most cases, this will be self-evident. However, in doubtful cases, the student must consult his or her psychology adviser and the department concerned.

The Honors Program. Honors work in psychology is available to seniors who have demonstrated high scholastic achievement and the ability to work independently in scholarly situations. Students may seek admission to the honors program by requesting the faculty member under whose direction students intend to do research work to submit their names to the full faculty for consideration. Students in the honors program carry out an independent empirical research project under

the sponsorship of one or more faculty members. This research provides a basis for a thesis, which, upon completion, is presented and defended by the students before an Examining Committee of faculty members. On the basis of the report of the Examining Committee and the students' advisers for the project, the department may recommend to the College Board that the students be awarded departmental honors at one of the following levels: highest honors, high honors, or honors in psychology.

DOCTORAL PROGRAM

General Requirements. The department admits to graduate work only those students who plan to enroll in the Ph.D. program on a full-time basis. The overall aim of the graduate program is to provide students with a general integrated background covering the various areas of psychology. Within these emphases there are several specialized programs available.

Although a small department cannot reflect the entire spectrum of perspectives toward the study of psychology that one finds in the United States, a considerable number of theoretical orientations are exemplified by the various members of the department. The most important feature of the department's intellectual ethos is an emphasis on theoretically grounded inquiry and conceptually and methodologically rigorous research. In all of the department's programs, including the clinical program, there is a deep concern with conceptual analysis and theoretically grounded and directed inquiry. The department is perhaps unusual on the American scene in the diversity of methods of investigation used by faculty and graduate students in their work, and the range of problems taken to fall within the purview of psychologists. Our students are acquainted not only with traditional experimental and naturalistic methods, but also with phenomenological, structural, hermeneutic, and other methodologies.

Participation in research is strongly encouraged throughout the graduate experience, the nature of the research being determined by shared interests of students with faculty members. Students are expected to contribute significantly to problem formulation, conceptualization, methodology, analysis, and write-up of research work.

Advisory Committee. A committee consisting of two full-time faculty members will be assigned to help each student plan his/her curriculum to best meet needs and goals. This committee will consist of one faculty member whose work is closest to the student's research interests, and one other assigned by the department. The committee may change or waive any of the requirements of specific training programs, but ordinarily its function is to assist the student to select a curriculum from within the normal requirements.

Coursework. Students ordinarily are expected to take four courses in each semester for their first two years, including in their first year *Problem, Theory, and Method in Psychology* (301) and *Statistical Methods* (302). In subsequent years, students continue to enroll in a full program which ordinarily includes two or three content courses and research and reading courses. A total of at least eighteen one-semester courses is required for admission to candidacy for the Ph.D.

The department retains a breadth requirement, which is administered and defined by the student's Advisory Committee. Each graduate student will submit by January 1 of the second year of graduate study a plan of study. The student will explain and defend this plan to the committee. If the committee does not approve the plan, the student may appeal this decision to the department as a whole, or may ask that a different Advisory Committee be appointed. This plan will be reviewed each year in accordance with the course offerings.

To provide a basis for evaluation of students' progress early in their careers, all students are required to write two papers (or the equivalent) during each of their first four semesters, except that they need not write such papers during the

semester in which they complete their M.A. thesis. Papers may be required by instructors in all or none of a student's courses. In the latter case, the student is required to submit papers in a minimum of two courses. Early in the semester, before writing the paper, the student should discuss the proposed content with the instructor. In some cases, the instructor may substitute some other "evaluatable performance" (e.g., an examination) for a paper. Note that it is the student's responsibility to ensure that the instructors in at least two of his/her courses understand that the student intends to submit these papers to them. It is the instructor's responsibility to define what constitutes an adequate fulfillment of this requirement. The student is also responsible for informing the department office, before the end of the semester, what papers will be submitted and which instructor will evaluate those papers. If students have any questions they should consult the instructor of their advisory committee.

Qualifying examination in quantitative methods. All students are required to demonstrate competence in quantitative methods by satisfactory performance on a qualifying examination in that area. The examination is normally taken at the end of the student's first year, at the completion of the course in quantitative methods.

M.A. degree. The M.A. degree, a required step in our Ph.D. program, is awarded after satisfactory completion of at least eight one-semester courses or their equivalent; the fulfillment of the departmental paper requirement; and the execution of an experimental or empirical thesis, adequately defended in a one-hour examination. The thesis is expected to be relatively brief and, as a rule, to be written up in the form of an article suitable for submission to a journal appropriate to the kind of work embodied in the research. All of these requirements for the M.A. degree must be completed by the end of the second year of graduate study. Students who have not completed their M.A. degree by the end of the second year will not be permitted to enroll as resident students for the third year. A student who does not complete the M.A. degree by the end of the third year ordinarily is not permitted to continue in the Ph.D. program, but will be given ample opportunity to complete a "terminal" master's degree.

Major paper and oral examination. The major paper is normally to be done within one year after completing the M.A. This paper is expected to demonstrate mastery of research and theory in the student's area of specialization. To facilitate completion, the student is encouraged to enroll in *Directed Readings* with a faculty member during one or both of the semesters in which the paper is to be completed. An oral examination of this material will also be held shortly after the paper has been submitted. If the paper is not finished on time, the faculty will select some of its members to give additional help to the student during the summer. If a student does not complete the paper before September of the fourth year, the student will not be permitted to enroll as a resident student for that year or until the paper is completed.

Admission to Ph.D. candidacy. Satisfactory completion of at least eighteen one-semester content courses (including 301 and 302), as well as the above requirements, is necessary for admission to candidacy for the Ph.D. degree. All the requirements for Ph.D. candidacy, including the major paper, must be met within two years of completing the M.A. A student who does not do so may be dropped from the Ph.D. program.

Ph.D. dissertation. The student demonstrates the ability to conduct research by the presentation of an acceptable dissertation. The topic of the dissertation usually is selected by the student working with one or more members of the faculty. Once the student has worked out a general research plan, a Dissertation Committee is formed to supervise, and assist in, all phases of the research effort, from articulation of the research design to the write-up of the final draft. After the committee has reviewed the dissertation proposal carefully, the proposal is circulated

to all other members of the faculty for comments and suggestions. The Dissertation Committee then has the authority and responsibility to approve the final form of the proposal before the student undertakes the actual research. After completion of the research, the student submits a draft of the dissertation to the committee, who will aid the student in making the necessary revisions. At the point that the committee decides that the dissertation is complete and ready for presentation, copies of the dissertation are made available to the entire department faculty.

Ph.D. oral examination. Following submission of the dissertation to the department, a final two-hour oral examination is held in which the student presents and defends his/her dissertation and shows competence in a general field of psychology as well as in his/her area of specialization.

These guidelines result in an upper limit of six years for completion of the Ph.D. (excluding an internship year or official leave). An additional year may also be granted by faculty approval of a petition on other grounds such as part-time study because of financial necessity. Those desiring more detail on graduate requirements and their timing should request a copy of *Information on the Graduate Program in Psychology*.

Training Program in Clinical Psychology. The basic philosophy in the training of clinical psychology students, as for all graduate students in the department, is that specialization is a process of individuation and emphasis rather than one of restriction, isolation, or compartmentalization. Our aim is to provide an integrated series of intensive educational experiences in class, in laboratory, and in practicum clinical settings (in the University and other agencies) in which specialist training in clinical psychology is attained against a background of increasing competence in general psychology, theory, and research.

In addition to the more traditional opportunities, the program offers: (1) child clinical, (2) human neuropsychology, (3) family interactions. The program has, in addition to the general requirements, the following special requirements. Each student must take at least one course from each of three areas: (1) biological bases of behavior (e.g., physiological psychology, behavior and evolution, human neuropsychology); (2) cognitive-affective bases of behavior (e.g., symbolism, cognitive development, logical reasoning, action and emotion); and (3) social bases of behavior (e.g., interpersonal relations, social cognition). Each student must take the following courses in individual behavior: *Psychopathology* (312) and *Theories of Psychotherapy* (332). Each student must complete a minimum of one year of internship in clinical settings; the student may satisfy this requirement by a full-time internship in the third or fourth year or by a "distributed" internship, part-time over several years. All clinical students participate for four years in the Psychological Services Center, a department-operated training agency offering psychodiagnostic and psychotherapeutic services to members of the Clark community. For further information contact one of the program's codirectors, Dr. Leonard Cirillo or Dr. Morton Wiener.

Developmental Psychology Program. The Developmental Psychology Program is intended to prepare students for a career in research, teaching, and scholarly activity. It strives to impart both theoretical sophistication and competence in observational, experimental, and comparative inquiry with regard to developmental issues. The focus of the program is on ways of representing and examining all life phenomena rather than focusing exclusively on a particular population (e.g., infants, children, adults) or a specific subject matter. Within this general framework, however, the program does offer in-depth training with special populations and in specific areas (cognitive processes, language, symbolization, social conception, mother-infant interactions, logical reasoning, psychopathology, collective

phenomena, and others). A nursery school associated with the University and a modern laboratory serve as facilities for both empirical and clinical research with children.

Since there are no sharp separations between different programs within the department, students who work primarily in the developmental program have the opportunity to learn about a variety of methodologies (naturalistic, experimental, historical, clinical, phenomenological, hermeneutic) that enter into developmental analysis. For further information contact the program director, Dr. Ina C. Uzgiris.

Social-Personality Psychology Program. Perhaps the most distinctive feature of the social-personality program is its emphasis on the description and analysis of social experience. While we are also interested in how persons behave, we have a concern for experience in its own right. The faculty members most directly involved in the program have developed different research strategies that tap into the experiences of everyday life—e.g., the approach of topological and vector psychology to understand the social-emotional aspects of interpersonal relations and values as experienced by the participants; the phenomenological method to investigate emotions and the role of affective experiences in the choices that persons confront as they lead their lives; and the experimental approach to deal with the question of how persons come to know and experience themselves and to investigate the structure and function of this self-knowledge. Other members of the department provide an extremely important balance and supplement to these strategies in light of the lack of boundaries between programs and the fact that a good deal of research in other areas often involves social psychological topics. While there are no formal requirements in the social-personality program, each student is expected to become acquainted with the main approaches to experience mentioned above and is encouraged to participate in seminars with as many different faculty members as possible. For further information contact the program director, Dr. Joseph deRivera.

Graduate Study in Cognition and in Neuroscience. Graduate training towards the Ph.D. is offered in the areas of perception, psychophysics, cognition, language, physiological psychology, environmental cognition, and ethology. The program is organized according to a flexible sequence of seminars covering the theoretical foundations, content, and methodology in those areas, as well as specialized seminars.

The emphasis of the program is on the acquisition of both experimental and theoretical skills, and the department as a whole reflects this joint orientation. Strong emphasis is placed on independent scholarship and research, and students are encouraged to join ongoing research projects or to pursue their own. Many faculty members hold weekly informal meetings with small groups of students in their area of interest, where the current research and ideas of the participants are discussed. Some of the current research interests of the faculty associated with the cognitive and neuroscience area include logical cognition, mental imagery, visual perception, conceptual development, sensory psychology and psychophysics of taste and smell, ethology and evolutionary theory, individual differences in cognitive processing, recovery of functions and CNS plasticity, and psychobiology of aging.

In teaching and research, the cognitive and neuroscience faculty reflects the values traditional to Clark, which emphasize theoretical relevance, preserving and exploring the connections between areas of specialization. Faculty and students within and across areas typically maintain extensive and regular interactions. In particular, most of the cognitive and neuroscience faculty have close connections with the developmental area, both in teaching and in research.

The department is of moderate size (approximately forty graduate students in residence in any given year, with seventeen full-time faculty and twenty-six part-time faculty). This allows for both a diversity of interests and a cohesive atmosphere. This also makes possible a highly individualized approach to training: After taking the core methodological courses, students have a substantial role in building a curriculum in keeping with their own interests, and frequently collaborate in research with faculty members. The fact that graduate courses are typically small in size and meet in seminars similarly fosters interactions and active participation.

The department also has educational and research ties with a number of institutions in the Worcester-Boston area (e.g., the Neuropsychology Unit of Boston Veterans Administration Hospital, the Worcester Foundation for Experimental Biology, University of Massachusetts Medical School), as well as with other departments at Clark.

Undergraduate Training in Neuroscience and Psychobiology. The Departments of Psychology and Biology have recently developed a new undergraduate concentration in neuroscience. For the psychology major, the emphasis of this concentration is on the relationship of brain function to behavior. However, the faculty consists of members of the psychology, biology, chemistry, and physics departments. There are also visiting lecturers from nearby institutions such as the University of Massachusetts Medical School and the Worcester Foundation for Experimental Biology as well as distinguished colleagues from the Boston area.

One of the unique aspects of this concentration is that students are given the opportunity to begin research at an early stage of their undergraduate careers and in close collaboration with members of the faculty, graduate students, and other undergraduates. In neuroscience/psychology, research projects include studies of recovery from brain injury, sex differences in brain structure and function, the use of neurotrophic factors to promote nerve regeneration after brain injury, and fetal brain tissue transplantation to study CNS development and function. Other Psychology Department faculty are concerned with the development of sensation and perception, communication in birds, and chemoreception in taste and olfaction. Laboratory facilities are excellent, and through the Worcester Consortium for Higher Education, courses are available at cooperating institutions such as the University of Massachusetts Medical School. For more information on neuroscience/psychobiology write to: Dr. Donald G. Stein, Brain Research Laboratory, Department of Psychology.

Rehabilitation Research Training. In conjunction with all other areas of specialization, rehabilitation research training is available. This training is designed to prepare students for investigations of psychological problems as they occur in everyday life. Emphasis on the development of novel techniques and concepts is the main feature of the training. An integral part of the training is an apprenticeship- practicum during which the various phases of research in real-life settings are examined under the guidance of a staff member. This training is especially pertinent to those who are interested in social-emotional and value problems of handicapped and nonhandicapped people. For further information, write to Dr. Tamara Dembo or Dr. Joseph deRivera.

Interdisciplinary work. The department recognizes that the interests of many students cut across established disciplines or areas and encourages students to pursue such interests if they see fit. Cross-disciplinary research is feasible in the department, not only because some members of the department themselves cut across traditional lines but also because of close relations between Psychology Department faculty and faculty in other departments in the University.

Applicants for graduate study in psychology who are interested in securing more detailed information concerning the department and its programs are urged to write to the department for a brochure.

POSTDOCTORAL TRAINING

The Psychology Department and the Heinz Werner Institute provide postdoctoral training in developmental psychology. In addition to individually oriented research and training opportunities, the developmental seminars are available for postdoctoral students.

THE HEINZ WERNER INSTITUTE FOR DEVELOPMENTAL ANALYSIS

Associated with the department is the Heinz Werner Institute for Developmental Analysis, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology, and certain areas of medicine; third, to train research workers on postdoctoral levels in the comparative-developmental approach to behavior. For further information, write to Dr. Seymour Wapner, chair of the Executive Committee.

COURSES

101 GENERAL PSYCHOLOGY/ Lecture, Discussion

Introduction to the principles of human behavior. No prerequisite. Unless otherwise noted, this course is a prerequisite to all other psychology offerings.

Mr. Wapner

Offered every semester

105 QUANTITATIVE METHODS/ Lecture

Introduction to the theory and methods of statistical inference, logic of experimental design, and the use of computer statistical packages, e.g. SPSS/X, BMDP.

Mr. Laird

Offered every semester

120 HUMAN COGNITION

Introduction to the study of memory, language, reasoning, and other higher mental processes. The course provides an introduction to the general perspective and current theoretical question in the field of cognitive psychology concerning those processes/functions, provides a survey of the recent empirical literature on those topics, and examines the theoretical implications of those findings. Objectives are to introduce students to that content area regarding the substantive questions, the empirical work, and the theoretical issues, to stimulate students' critical thinking regarding the relation between theory and evidence, to stimulate substantive interest in various questions, and to develop in students a basic literacy in the area as well as the capacity to think further about questions of interest to them in that area.

Ms. Joffe Falmagne

Offered every other year

130 PSYCHOLOGY OF LEARNING/ Lecture

Methods and findings in the study of learning are discussed, with emphasis on their relation to theories of learning. Selected controversial issues are examined.

Mr. Stevens

Offered every year

135 THE PARADOX OF ANIMAL SOCIALITY/ Lecture

Evaluates a new evolutionary perspective called sociobiology by examining Darwinian theory as it applies to animal social organizations. The course redefines such concepts as natural selection, adaptation, communication, personality, emotions, grouping, and territoriality as they apply to animal behavior. This course is run with much class discussion and emphasis on questioning theories,

constructing new models, and arriving at new, clearer definitions. Prerequisite: Introductory biology or psychology normally required, but open to freshmen with special qualifications; please see instructor.

Mr. Thompson

Offered every year

140 SENSATION AND PERCEPTION/ Lecture

The five senses are studied with special emphasis on visual perception. Focus is on the processes by which information is picked up from the environment and then coded, transformed, and integrated by the sensory systems. Topics include: the neurophysiology of each sensory system, feature detectors, pattern perception, perceptual constancies, visual illusions, space perception, and perceptual development.

Ms. Wiser

Offered every other year

150 INTRODUCTION TO CHILD PSYCHOLOGY/ Lecture

The development of intellectual and social functioning in the child is discussed. Theoretical approaches to conceptualizing change in the developing child are emphasized: psychoanalytic, Piagetian, and behavioristic approaches are contrasted.

Ms. Uzgis

Offered every year

155 PSYCHOLOGY AS A HUMAN SCIENCE/ Dialogical lecture

A close examination of attempts by scholars from a wide variety of disciplines (philosophy, history, literature and literary criticism, anthropology, political science, theology, linguistics, semiotics, depth psychology) to describe, understand, and explain complex human action, experience, thought, and production in everyday life. This course is intended to provide a radical alternative to much of current academic psychology, with respect to theories, problems, and methods. Given on a credit/no credit basis. No limit. Note: This course is a prerequisite for upper level psychology courses, 237, 242, 260, 276, 277, 279, 280, 281, 283, and 284. Psychology 101 is *not* a prerequisite for this course or any of the upper level courses listed here.

Mr. Kaplan

Offered every year

160-161 NEUROSCIENCE I and NEUROSCIENCE II

A two-semester, two-credit course, covering the basic neurosciences and brain/behavior functions. The courses are taught by Professors Stein and Kennedy, and guest lecturers from the University of Massachusetts Medical School and the Worcester Foundation for Experimental Biology, among others. *Neuroscience* 160 and 161 replace Psychology 230 (*Brain Function and Behavior*) and Biology 223 (*Neurobiology*). Prerequisites: Psychology 101 and Biology 100 (*General Psychology and Introduction to Biology*).

Mr. Stein, Ms. Kennedy

Offered every year

162 PSYCHOANALYTIC INTERPRETATION OF BEHAVIOR/ Lecture, Discussion

Offers students a basis for the understanding and application of psychoanalytic (Freudian) concepts. Students are challenged to interpret simple and complex conflicts in behavior. This course also requires students to remember definitions and give examples of concepts. The course focuses on the way psychoanalysts reason. The final examination requires students to analyze a major literary work from a psychoanalytic perspective. Psychology 101 is *not* a prerequisite.

Mr. Bibace

Offered every semester

170 SOCIAL PSYCHOLOGY/ Lecture

Contrasts the typical scientific approach to social psychology with a value-oriented approach. Both approaches are applied to understanding the basic processes involved in conformity, love, aggression, group dynamics, and intergroup relations (including community psychology and conflict management). These basic processes are related to the moral choices that confront our society today, choices about abortion, capital punishment, gun control, Third World intervention, and the nuclear arms race. In addition to midterm and final exams, students are required to undertake two moral actions, one on the personal and one on the political level, and to write short papers evaluating these actions.

Mr. deRivera

Offered every year

172 PSYCHOLOGY OF PERSONALITY/ Lecture

Consideration of various theoretical approaches to consistent differences between people, including psychoanalytic, trait, behavioristic, and humanist theories.

Mr. Laird, Mr. Cirillo

Offered every semester

194 THE PSYCHOLOGY OF PLAY/ Lecture

The psychological significance of play in the life of the individual is explored. Special emphasis includes symbolic play, the development of play from childhood to adulthood, and the relation between individual and social play. Comparative analyses consider the function of play in nonhuman as well as the human species. Psychology 101 is *not* a prerequisite for this course. The class is limited to 20 freshmen and sophomores.

Mr. Damon

Offered every other year

195 PURSUIT OF AN INQUIRY/ Seminar

Designed primarily for incoming students, this course provides an opportunity for them to pursue a piece of independent scholarship in the field of their choice. Each must write a substantial term paper by the end of the semester. Class meetings are used to clarify the exposition of ideas and to train the participants in how to exploit the resources of the community for independent scholarship. Papers may be written on any topic the writer pleases. Psychology 101 is *not* a prerequisite.

Mr. Thompson

Offered every year

196 THE PSYCHOLOGY OF AMERICAN SPORT/ Lecture

Focuses on two kinds of psychological issues: those related to the participant and those related to the spectator. Participant topics include the problems of teaching and learning physical skills, with special attention to the relation between our actions and our ideas about our actions; the effects of athletic participation on other physical and mental functioning; and the role of psychological factors in athletic and other performance, including both transient factors such as confidence and "momentum" and relatively enduring factors such as the personality of the performer. Among the topics covered with respect to the spectator are the social and psychological functions of spectator sports for individuals and society and the effects of spectator sports on the audience, with special attention to the effects of athletic violence on audiences. No prerequisites; unlimited.

Mr. Laird

Offered every other year

200 LABORATORY IN ETHOLOGY/ Laboratory, Discussion

The members of the class participate in research projects on the behavioral biology of a variety of species, mostly birds. Members work in small teams each of which

is devoted to the study of a single species. Bird species available for study include bluejays, red wing black birds, song sparrows, towhees, robins, barn swallows, orioles, bobolinks, phoebes, crows, cardinals, and others. Nonbird species include wasps, frogs, dairy cattle, and others. The laboratory is conducted at the instructor's farm in New Braintree. Transportation to the farm may be provided at a nominal extra cost. Students must provide their own binoculars and wet weather gear. Enrollment is limited. Admission is by negotiation.

Mr. Thompson

Offered periodically

201 LABORATORY IN SOCIAL PSYCHOLOGY/ Laboratory, Discussion

General principles of experimental design are learned through the design and performance of original experiments in experimental social psychology. Both group and individual experiments are conducted in any of the usual topic areas of social psychology. The lab is limited to 20 students. Prerequisites: Psychology 170, 105, and permission of the instructor.

Mr. Laird

Offered every year

202 LABORATORY IN CHILD RESEARCH/ Laboratory, Discussion

An introduction to methods used in the study of child thought and behavior. Students conduct research projects involving observational, experimental, and interviewing techniques. Discussions will consider means of data analysis as well as data collection. Prerequisite: Psychology 105. The lab is limited to 16 students.

Mr. Damon

Offered every year

203 LABORATORY IN HUMAN COGNITION/ Laboratory, Discussion

Experimental studies are conducted in the area of reasoning, categorization, language comprehension, learning, and memory. This course familiarizes students with the methods used in cognitive psychology, the range of problems studied, and the theoretical concepts used to interpret experiments. The course is designed to teach skills in experimental design, statistical analysis, reading and summarizing scientific journal articles, and scientific writing in the context of conducting two or three closely supervised experimental projects and one more independent project. Prerequisite: Psychology 105, Psychology 120. (Psychology 120 can be taken in the same semester as the lab.)

Ms. Joffe Falmagne

Offered every year

204 LABORATORY IN EMOTION AND MOTIVATION/ Laboratory, Discussion

Includes the design of studies to test ideas about emotions and how they influence our actions, the gathering of data, and ways to report the data to the psychological community. Prerequisite: Psychology 105.

Mr. deRivera

Offered every other year

205 LABORATORY IN CHEMICAL SENSES/ Laboratory, Discussion

Concepts of experimental design and method are discussed. Experiments are conducted on the scaling of taste, smell, and flavor. Examples are comparison of the sweetness and pleasantness of different sugars, and determination of the role of odor in flavor perception. Prerequisite: Psychology 105.

Mr. Stevens

Offered every year

206 LABORATORY IN PERSONALITY/ Laboratory, Discussion

The issues and problems in psychological research in general and in the personality area in particular are examined, the problems being exemplified in studies developed and performed by the class group and by individuals. Experiments may be in any of the conventional areas of personality research, such

as perceptual defense, motives and performance, self-perception, experimenter influence, and emotions. Prerequisites: Psychology 170 or 172, 105, permission of the instructor.

Mr. Laird, Mr. Wiener

Offered every year

207 LABORATORY IN PERCEPTION/ Laboratory, Discussion

Stresses mastery of experimental skills and scientific writing in the context of the investigation of sensory and perceptual phenomena in a variety of sense modalities. Prerequisites: Psychology, 105, 140, permission of instructor.

Ms. Wiser

Offered every year

208 LABORATORY IN CHILD PSYCHOLOGY/ Laboratory, Discussion

An introduction to research methods employed in the study of children through participation in studies carried out by the class. Analysis and write-up of results is done individually. Relevant theoretical and methodological issues are discussed with the aim of placing the experimental study of child behavior within the study of development. Prerequisites: Psychology 105, 150.

Ms. Uzgiris

Offered every other year

209 LABORATORY IN STUDENT ADJUSTMENT TO COLLEGE/ Laboratory

The rationale, method, and findings of an ongoing research project at Clark investigating personality and environmental determinants of adjustment to college, with consideration of similar research elsewhere as reported in the professional literature. Relevant issues in personality measurement are addressed, and each student develops and carries out an empirical investigation relevant to the course topic. Prerequisites: Psychology 105 and 172 and permission of the instructor.

Mr. Baker

Offered every semester

210 LABORATORY IN PHENOMENOLOGY/ Laboratory, Discussion

Designed to acquaint students with the method of "conceptual encounter"—a way of interviewing that is useful in exploring the structure of emotional experience. Corequisite: Psychology 243.

Mr. deRivera

Offered every other year

211 FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING/ Laboratory, Discussion

The illustration of various cognitive and social-interpersonal models of human behavior in the classroom setting is observed. Special consideration is given to the work of Freud, Piaget, Skinner, Wertheimer, Lewis, and F. Kluckhohn. Students carry out field observations and formulate and execute their own individual projects. Prerequisites: Psychology 105, permission of instructor.

Mr. Zern

Offered every year

213 LABORATORY IN INTERPERSONAL RELATIONS/ Laboratory, Discussion

Interpersonal relations of the donor-recipient kind are investigated. Students learn how to analyze qualitatively these duality relations. Interviews and analysis of one's own experiences are the primary methods used. The type of analysis taught is useful in psychological practice, such as in the area of rehabilitation, in development of theoretical conceptualizations necessary for the advancement of qualitative research, and in everyday life. Corequisite: Psychology 286. Prerequisite: permission of the instructor. Open to juniors, seniors, and graduate students. Limited to 10 students.

Ms. Dembo

Offered every other year

214 LABORATORY IN REHABILITATION/ Laboratory, Discussion

The distinction between individual and social rehabilitation is considered with the focus on social rehabilitation. Emphasis is placed on the study of interpersonal relations. Students learn how to select problems for study, investigate them, qualitatively analyze them, and alleviate them. Corequisite: Psychology 274. Prerequisite: permission of instructor. Open to juniors, seniors, and graduate students. Limited to 10 students.

Ms. Dembo

Offered every other year

215 RESEARCH IN EMOTION AND MOTIVATION/ Laboratory, Discussion

Students, working in close collaboration with the instructor, design, conduct, and present a piece of research that investigates an emotional or motivational phenomenon. Prerequisites: Psychology 204 or Psychology 210, and permission of instructor.

Mr. deRivera

Offered every other year

216 RESEARCH IN STUDENT ADJUSTMENT TO COLLEGE/ Laboratory, Discussion

Supervised individual participation in an ongoing research project at Clark investigating personality and environmental determination of adjustment to college. Prerequisites: Psychology 209 and permission of instructor.

Mr. Baker

Offered every semester

217 RESEARCH ON DEVELOPMENT IN EARLY CHILDHOOD/ Laboratory, Discussion

With roots in Piaget's theorizing, a constructivist-interactionist approach to the study of development in infancy and early childhood is exemplified through the findings and problems from ongoing research projects. Students each formulate a pertinent study, carry it out, and prepare papers describing their work. Prerequisite: Psychology 208 or permission of instructor.

Ms. Uzgirls

Offered every year

219 RESEARCH IN BRAIN DAMAGE AND BEHAVIOR/ Laboratory, Discussion

Usually lasts at least one academic year and is open to anyone who has the high level of motivation and intellectual curiosity necessary to participate in an intensive program of research on the relationship between brain function and behavior. Essentially, the course takes the form of a "tutorial" in which there is a very close working relationship among students, the professor, and the graduate students working in the laboratory. There is active involvement in *all* phases of research, including searching available literature, planning and design of experiments, all surgical and histological procedures, data analyses, and final preparation of the material for presentation (by the students) at scientific meetings or for publication. It must be emphasized that, while solid grasp of experimental techniques is necessary, the development of conceptual and theoretical skills is given first priority. Enrollment is strictly limited and is by invitation of the instructor. Prerequisites: high academic standing, biological or experimental background desirable but not essential.

Mr. Stein

Offered every semester

220 RESEARCH IN CHEMORECEPTION/ Laboratory, Discussion

Students design, conduct, and interpret research in taste, smell, and flavor. Prerequisite: permission of instructor.

Mr. Stevens

Offered every year

221 RESEARCH IN SOCIAL PSYCHOLOGY/ Laboratory, Discussion

Students participate in the design, execution, analysis, and interpretation of research on self-awareness and self-knowledge, including areas of emotions, attitudes, and abilities. Prerequisites: previous courses in social psychology, statistics, and at least one laboratory course, and permission of the instructor.

Mr. Laird

Offered every year

222 RESEARCH IN CONCEPTUAL DEVELOPMENT/ Laboratory, Discussion

Students participate in an ongoing research program in collaboration with the instructor in the area of perceptual processing. Prerequisite: permission of the instructor. Enrollment limited to two.

Ms. Wiser

Offered every year

226 RESEARCH IN PERCEPTION/ Laboratory, Discussion

Students participate in an ongoing research program in collaboration with the instructor in the area of perceptual processing and the components of perceptual development. Prerequisite: permission of the instructor, Psychology 140. Enrollment limited to three.

Ms. Wiser

Offered every year

228 RESEARCH ON DEVELOPMENTAL ASPECTS OF TRANSACTIONS OF PERSONS-IN-ENVIRONMENTS/ Laboratory, Discussion

Theory, findings, and research problems deriving from an ongoing research program—an organismic-developmental systems approach to the analysis of transactions of persons-in-environments—are discussed. Empirical studies on problems relevant to the research program are formulated and conducted by individual students. A research proposal and final report describing the research project are prepared. Ideally, the research is presented at undergraduate or professional meetings, and a manuscript is prepared for submission to a journal. Prerequisites: Psychology 105, permission of instructor.

Mr. Wapner

Offered every semester

232 HUMAN COGNITION/ Lecture

Critically surveys current theoretical viewpoints, empirical findings, and selected theoretical issues in the areas of language, concepts and categorization, memory, pattern recognition, reasoning, mental imagery, and knowledge representation. Though not a seminar, student participation is required some of the time through structured discussions of readings and class presentations. Prerequisite: Psychology 105.

Ms. Joffe Falmagne, Ms. Wiser

Offered periodically

235 PSYCHOTHERAPIES

A variety of methods of curing symptoms, solving problems in living, and promoting personal development are considered through class discussion and illustration and through intensive reading of primary sources. Credit depends on written papers as well as class participation. Prerequisites: Psychology 172, permission of the instructor.

Mr. Cirillo

Offered every year

237 THE PSYCHOLOGY OF LOVE AND HATE IN LIFE AND LITERATURE/ Dialogical Lecture

An examination, via the reading and discussion of short stories, as well as the critical scrutiny of various theories, of the diverse manifestations of love, hate, and kindred emotions in everyday life. The relations of emotional life to attitudes and

actions are considered throughout the life span and in social-collective phenomena, as well as in psychopathology. Prerequisite: Psychology 155. Enrollment limited.

Mr. Kaplan

Offered every other year

240 DEVELOPMENTAL APPROACHES TO BEHAVIOR/ Seminar

A critical examination of the presuppositions, methods, and empirical inquiries of those concerned with the developmental analysis of diverse kinds of behavioral systems or aspects of systems. Implications of developmental conceptualization for all of the life sciences are discussed. The course also focuses on recent critiques of developmental theories in general (e.g., Foucault, Derrida, Kaplan) as well as critiques (e.g., that of Carol Gilligan) of specific developmental approaches. Accessible to juniors, seniors, and graduate students. Prerequisite for undergraduates: Psychology 155. Enrollment limited. Permission of instructor required. Psychology 101 is not a prerequisite.

Mr. Kaplan

Offered periodically

241 COGNITIVE STUDIES OF MIND/ Seminar

Focuses on several topics having to do with the workings of the human mind, (e.g. Do we use mental images in thinking? To what extent are we rational beings? How is our conceptual knowledge organized?), as they have been studied by cognitive psychologists, philosophers, linguists, and other disciplines. As we discuss theories and issues about each of those topics, we also examine how psychology, philosophy, linguistics, and artificial intelligence can contribute to our understanding of the human mind. Introduces students to the rapidly developing area of interdisciplinary study of mind known as cognitive science, provides familiarity with the framework and basic concepts of that approach, and provides in-depth discussion of some substantive topics of interest. The selection of specific topics discussed is flexible, so as to accommodate students' interests. Mostly readings and class discussions, with informal introductions to each topic discussed. Prerequisites: Psychology 120 or permission of instructor.

Ms. Joffe Falmagne

Offered every other year

242 PSYCHOLOGY OF LANGUAGE/ Seminar

A social-psychological, anthropological, and rhetorical consideration of the various functions of language in human behavior. Deals with the ways in which the linguistic system is used as symbolic action in everyday life, poetry, dreams, social movements. Also examined are various views concerning the relations between language and thought, language and action, language and knowledge, and language and politics. Open to juniors and above. Enrollment limited. Prerequisite for undergraduate psychology majors: Psychology 155. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered every other year

243 SEMINAR IN PHENOMENOLOGICAL PSYCHOLOGY/ Seminar

Describes and analyzes personal experience. Each of the readings describes a different aspect of experience. We then compare these descriptions with our own experience of our body, our environment, our self, others, our emotions, actions, and thoughts, and with our imagination and our relationship to reality.

Mr. deRivera

Offered every other year

245 DEVELOPMENT IN INFANCY/ Seminar

Current research on human infants is examined, with emphasis on relations between functioning during this period and later in ontogenesis. A view of the child as an organized adaptive system is emphasized. Topics to be considered include

learning, intellectual functioning, social relationships, and the beginnings of language. Some consideration is given to deviations from normal development. Prerequisite: permission of instructor.

Ms. Uzgis

Offered every other year

247 SOCIAL DEVELOPMENT FROM INFANCY THROUGH ADOLESCENCE/ Seminar

An examination of theories and research dealing with the process of socialization in the first two decades of life. Topics to be emphasized include: attachment, role taking, the development of social and sexual identity, and moral development.

Mr. Damon

Offered every year

248 CONCEPTS IN THEORIES OF PERSONALITY—NORMAL AND ABNORMAL/ Seminar

Considers and analyzes: (1) concepts and issues in theories of personality and (2) concepts used to account for deviant behavior.

Mr. Wiener

Offered every other year

249 WOMEN IN SOCIETY/ Seminar

Includes three related parts: (1) *the context*, including a cross-cultural, anthropological examination of women's cultural status in society, a study of the economic, historical, and environmental factors impinging on the individual (language, media, literature, cultural institutions), and a discussion of the role of biological factors in psychological functioning; (2) *individual functioning*, covering such topics as personality development, life issues of women, achievement, motivation, intellectual functioning, power; (3) *women's roles and functions in society*, including mothering, work, professional careers, homemaking, politics, and issues relating to role choices and adult development. Objectives are: (a) to promote a broadly based understanding of the cultural, historical, economic, and environmental factors affecting women's development and functioning; (b) to equip students for pursuing informed discussions and critical thinking on related issues. Discussions of interactions between cultural, social, psychological, and biological factors are emphasized; extensive bibliographical references are provided.

Ms. Joffe Falmagne

Offered periodically

250 COMMUNICATION: VERBAL AND NONVERBAL/ Seminar

Deals with: (1) an analysis of the term communication and (2) a study of the varieties of communication patterns for different populations.

Mr. Wiener

Offered every year

254 INTERPRETATION OF BEHAVIORS TRADITIONALLY SUBSUMED BY "ABNORMAL PSYCHOLOGY"/ Seminar

Behaviors such as schizophrenia, depression, hysteria, obsession, and antisocial personality are examined. The goal is to articulate multiple theoretical and relational perspectives regarding what is referred to as "abnormal," assumptions regarding how "abnormality" comes about; methods of treatment, and the assumptions which lie behind them. Students participate in the clinician's "world of action." Students observe, describe, interpret, and prescribe courses of action for sample "cases," which fall within various "abnormal" categories. Prerequisite: Psychology 172, permission of instructor.

Mr. Bibace

Offered every year

260 INTERPRETATION OF DREAMS AND OTHER PRODUCTS OF THE IMAGINATION/ Seminar

Deals with the exposition, application, and critical evaluation of various systems for the interpretation of dreams and other products of the imagination (poetry, art, mythology). Included for examination are the theories of Freud, Jung, Boss (phenomenological), May (existential), and Burke/Kaplan (genetic-dramatism). Problems of validity of interpretation are discussed, and the relation of dream interpretation to the interpretation of other products of the imagination is examined. Open to juniors, seniors, and graduate students. Prerequisite: Psychology 155 and permission of instructor. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered every other year

261 HUMAN NEUROPSYCHOLOGY PROSEMINAR, PARTS I and II/ Lecture, Discussion

Approximately ten prominent lecturers review and discuss current research. Topics include: overview of brain organization, brain electrical potentials, cerebral dominance, neuroanatomy and pathology of language, bilingualism, emotion, and psychosurgery. Yearlong course; divisible. Open to advanced undergraduates and graduate students.

Ms. Oscar-Berman, Ms. Kaplan

Offered every year

262 NEUROPSYCHOLOGY OF PERCEPTION AND MEMORY/ Seminar

Models of normal information processing and their application to neurologically impaired perceptual and mnemonic processes are reviewed. An attempt is made to show how different neurological disorders represent failures at distinctive stages of information processing. Clinical materials related to visual object agnosia, constructional apraxia, and various amnesic states are presented and discussed in detail. Emphasis is placed upon a critical examination of the theoretical and experimental investigations of Luria, Teuber, Talland, and Milner. Open to advanced undergraduate and graduate students.

Ms. Oscar-Berman

Offered periodically

263 PERCEPTUAL DEVELOPMENT/ Seminar

Addresses the development of visual, auditory, tactile, and kinesthetic abilities during the first two years of life, with special emphasis on visual development. Topics include: anatomical and neurophysiological development of sensory systems, space perception, object perception, speech perception, face perception, formation of perceptual categories, and intersensory integration. Several theoretical viewpoints are studied: Gestalt psychology, E. Gibson, Piaget, T.G. Bower. The questions raised throughout the course are: what components of perception are innate, what components result from maturation, from experience, or from an interplay between genetic and experiential factors?

Ms. Wiser

Offered every other year

264 HISTORY AND EVOLUTION OF IDEAS IN BRAIN FUNCTION AND BEHAVIOR/ Seminar

Discusses the evolution of the concepts of brain function and structure beginning with ancient Greek and Middle Eastern notions of the mind-body problem and ending with current concepts of the brain. The issue of localization of function in the brain and the evolution of thinking about this problem serve as the underlying theme for organizing the topic. All students are expected to present short seminars and lead a critical and evaluative discussion of the materials they present. A critical, evaluative paper on the topic of the student's choice must be

submitted by the end of the semester to obtain credit for this course. Prerequisite: permission of the instructor.

Mr. Stein

Offered periodically

265 NEUROPSYCHOLOGY OF LANGUAGE/ Seminar

Aphasia, alexia, and associated disorders of language resulting from focal brain damage are reviewed in relation to current conceptions of normal language function. Open to advanced undergraduate and graduate students.

Mr. Howes, Ms. Menn

Offered periodically

266 CEREBRAL DOMINANCE SEMINAR/ Seminar

The clinical basis for present views of cerebral dominance is reviewed in relation to developmental and genetic evidence. Experimental studies with normal and pathological populations are reviewed with respect to their bearing on theories of brain laterality. Open to advanced undergraduate and graduate students.

Mr. Goodglass, Staff

Offered periodically

267 BIOLOGICAL DETERMINISM AND BEHAVIOR/ Seminar

Beginning with the deterministic conceptions of its participants, this course explores some intellectual history and contemporary data concerning the idea that behavior is determined by evolutionary history and necessity. Especially designed for freshmen. Limited to twenty students. Primarily offered to students who are not taking general psychology concurrently.

Mr. Thompson

Offered every year

269 MOTIVATION/ Seminar

The concept of motivation is examined. Several theoretical models are discussed, including those of psychoanalytic, ethological, and learning theories. Each member of the class makes an oral presentation and submits a paper.

Mr. Stevens

Offered every year

270 ADVANCED TOPICS IN SOCIAL PSYCHOLOGY/ Seminar

An intensive treatment of selected areas in social psychological research and theory, including consistency theories in attitude formation and in interpersonal perception; attribution theory in self-perception; social/situational determinants of normal, everyday behavior and of antisocial behaviors such as violence, criminality, and riots. Ordinarily limited to senior majors in psychology or sociology. Prerequisite: permission of instructor.

Mr. Laird

Offered every other year

273 CRITIQUE OF PSYCHOLOGICAL THEORIES AND APPROACHES TO SOCIAL SCIENCE/ Seminar

A systematic critique of various approaches to an understanding of human behavior and the functioning of the human mind that are operative on the current scene. The approaches examined include psychoanalysis, sociobiology, Piagetian theory, cognitive science, and phenomenological psychology. Open to seniors and graduate students. Enrollment limited. Permission of instructor required. Psychology 155 is a prerequisite for undergraduates. Psychology 101 is not a prerequisite.

Mr. Kaplan

Offered periodically

274 SEMINAR IN REHABILITATION/ Seminar

Specific rehabilitation problems in interpersonal relations are discussed in qualitative research terms. Emphasis is placed on environmental conditions determining the lives of disadvantaged groups, such as the requirements of

domiciles. Corequisite: Psychology 214. Prerequisite: permission of the instructor. Limited to ten students.

Ms. Dembo

Offered every other year

276 SYMBOLISM IN EVERYDAY LIFE: MYTH, DREAM, AND SYMBOL/ Seminar

A close examination of the processes of symbol formation and symbol interpretation in everyday life activities, in social and religious myths, and in dreams and in literature. Both cultural and individual manifestations of symbol formation are examined, and various frameworks for the interpretation of symbols are critically discussed. Open to seniors and graduate students. Enrollment limited. Permission of the instructor required. Prerequisite for undergraduate psychology majors: Psychology 155.

Mr. Kaplan

Offered periodically

277 THE CREATIVE PROCESS/ Seminar

A critical examination of a number of attempts, in the humanities and human sciences, to describe and/or explain manifestations of creativity in the arts, sciences, and other domains. Major focus is on the factors presumably constituting the creative act, or inherent in creative functioning. Subsidiary attention is paid to conditions in the cosmos, society, or the personality structure supposedly facilitating or inhibiting creative functioning. Among the theorists considered are such philosophers as Aristotle, Kant, Hegel; such critics as Coleridge, K. Burke, A. Koestler; psychoanalysts of various persuasions and degrees of clarity, Freud, Kris, Rycroft, Jung, Neumann, Arieti, et al.; and psychologists from various schools. Enrollment limited. Permission of the instructor required. Prerequisite: Psychology 155. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered periodically

278 COGNITIVE DEVELOPMENT FROM INFANCY TO ADOLESCENCE/ Seminar

Focuses on an examination of selected research studies and theoretical accounts of concept development, memory, and reasoning, with special emphasis on Piagetian and Soviet perspectives. Prerequisite: permission of instructor.

Ms. Uzgiris

Offered every other year

279 DEVELOPMENT OF CONSCIOUSNESS/ Seminar

Designed to examine critically various esoteric views concerning the development of consciousness (mind) and stages of consciousness, and to compare and contrast these views with those prevailing in current academic psychology under the titles of personality development and cognitive development. Among the views considered are those deriving from Eastern thought (Vedas, Yoga, Buddhism), Near Eastern thought (Sufiism, Gurdjieff-Ouspensky, Arica) and Western religious and philosophical thought. Among the current views with which these are compared and contrasted are those of Freud, Jung, Piaget, and Werner in psychology, and Cassirer in philosophy. Prerequisite: Psychology 155. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered periodically

280 DEPTH PSYCHOLOGY, DEVELOPMENTAL THEORY, AND THEORY OF INTERPRETATION, PART I/ Seminar

A critical examination—in the light of current views on the nature of interpretation and the nature of signs and symbols—of various conceptions of human development advanced by a variety of thinkers. Although there will be a special

emphasis on “depth developmental psychologies” (e.g., Freud, Jung, and their disciples and followers), consideration also is given to the developmental perspectives of Piaget, Werner, and Vygotsky. Focus is on the extent to which conceptions of development, descriptions of development, and “explanations” of development are rooted in tacit commitments of the various theorists to unexamined dogmas as to the nature of reality, the place of mind in nature, the order of values, and the bases for interpretation of signs and symbols. Among the hermeneuticists and semioticians whose work is examined are Cassirer, Gadamer, Ricoeur, Burke, and Culler. Two-semester course. Prerequisite: permission of the instructor.

Mr. Kaplan

Offered every other year

281 DEPTH PSYCHOLOGY, DEVELOPMENTAL THEORY, AND THEORY OF INTERPRETATION, PART II/ Seminar

Continuation of Psychology 280. Prerequisite: Psychology 280.

Mr. Kaplan

Offered every other year

282 FUNCTIONAL NEUROANATOMY IN NEUROPSYCHOLOGY/ Lecture, Discussion

Designed to provide the student with an overview of the central nervous system, its structures and functions. The course also emphasizes a basic understanding of neurobehavioral symptoms and their relationship to neuropathology, including vascular, infectious, congenital, degenerative, and toxic insults to the central nervous system.

Ms. LaVecchio

Offered every year

283 HISTORICAL BACKGROUND OF CONTEMPORARY PSYCHOLOGY/ Seminar

Includes an appreciation of the generative ideas and world hypotheses underlying contemporary psychological approaches and traces the earlier manifestations of these ideas and world hypotheses in intellectual history or history of ideas.

Mr. Kaplan

Offered every other year

284 PSYCHOLOGY AND RELATED DISCIPLINES/ Seminar

Deals with the linkages or purported linkages between psychology and literature, psychology and art, psychology and law, psychology and religion, etc. Designed to deal with the two-way relations between various disciplines and psychology and the challenges that these paired disciplines pose for each other. No prerequisites. Permission of the instructor.

Mr. Kaplan

Offered periodically

285 EMOTION AND INTERPERSONAL RELATIONSHIPS/ Seminar

What are emotions and how do they affect our behavior and our relationships? We will examine a number of theories about different emotions and our relations with others. Prerequisite: permission of the instructor.

Mr. deRivera

Offered every other year

286 INTERPERSONAL RELATIONS/ Seminar

Students examine scientific and everyday life problems in the area of interpersonal relations. Data are gathered with interview methods and through special analysis of the students' own experiences and are then analyzed qualitatively. Corequisite: Psychology 213. Prerequisite: permission of the instructor. Open to juniors, seniors, and graduate students. Limited to ten students.

Ms. Dembo

Offered every fall

287 SELECTED PROBLEMS IN PHYSIOLOGICAL PSYCHOLOGY/ Seminar

An advanced seminar course that discusses contemporary issues in physiological psychology. In some cases recent theoretical advances are the focus of the seminar, while in other cases, new research methodologies may be the focus. The course is designed in collaboration with the students and with the goal of keeping them abreast of the latest developments in neuroscience and psychobiology.

Mr. Stein

Offered periodically

288 LOGICAL REASONING IN ADULTS AND CHILDREN/ Seminar

Covers in depth the current empirical findings and theoretical developments in the areas of logical reasoning in adults and children, especially in linguistic contexts. The course examines the extent to which logical principles are known by adults and children, the way in which that knowledge is represented mentally, and the way in which it may be acquired. The contrasts and connections with the Piagetian perspective are discussed. A supplementary reading list is provided at the end of the course; the aim of the course is to enable students to continue reading on their own in these areas after this introductory background. Prerequisite: permission of the instructor. Limited to ten students.

Ms. Joffe Falmagne

Offered every other year

289 PSYCHOLOGY FROM THE VIEWPOINT OF AN ORGANISMIC-DEVELOPMENTALIST/ Seminar

This is a systematic, integrated overview of the field of psychology. Using organismic-developmental theory as an integrating framework, paradigmatic problems and methods in psychology are surveyed with a major focus on the interrelationship of assumptions, hypotheses, and empirical findings in each area. A variety of phenomena of central interest to psychologists are treated utilizing such concepts as levels of organization, person-environment systems, and structure-function relationships. The course is conducted in seminar fashion, and students are expected to participate actively by analyzing relevant empirical work, giving presentations, etc. Prerequisite: permission of instructor.

Mr. Wapner

Offered periodically

296 DIRECTED RESEARCH IN PSYCHOLOGY/ Tutorial

An independent study for qualified students not in the Honors Program. Prerequisite: permission of instructor. Offered for variable credit.

Staff

Offered every semester

297 DIRECTED READINGS IN PSYCHOLOGY/ Tutorial

An independent study for qualified students not in the Honors Program. Prerequisite: permission of instructor. Offered for variable credit.

Staff

Offered every semester

298 SUPERVISED PRACTICUM AND DIRECTED READINGS IN USE OF PSYCHOLOGICAL KNOWLEDGE AND METHODS IN PRACTICAL SETTINGS

Supervised practical experience in a work-setting relevant to a topic selected by the student from the subject matter of a psychology course taken previously, with associated bibliographical research. Only one practicum course credit can be applied to the major. May substitute in the major for one of the two required upper level seminars (in the 240-289 range). Evaluation principally on basis of term paper integrating relevant literature and practicum observations. Enrollment must be approved by course coordinator.

Mr. Baker, Coordinator; Staff

Offered every semester

299 HONORS IN PSYCHOLOGY: SENIOR YEAR/ Tutorial

Students carry out a research project under the direction of a member of the staff. Permission of the department is required.

Staff

Offered every semester

300 PROSEMINAR: DEVELOPMENTAL PSYCHOLOGY

Devoted to the presentation and critique of different developmental approaches to the individual and his/her ways of functioning in the world. The approaches considered may include: (1) Piagetian, (2) organismic- developmental, (3) Soviet approaches to psychology, (4) Freudian and neo-Freudian, and (5) contrasting nativist or information-processing views. The aim is to acquaint the participants with sympathetic expositions of diverse points of view and the application of these viewpoints to empirical inquiry. It thus provides a basis for subsequent discussions in other seminars of the various ways of dealing with substantive issues (e.g., learning, moral action and moral judgment, language, the process of thinking). Several faculty members participate in conducting the seminar.

Mr. Damon, Ms. Uzgiris,

Offered every other year

Ms. Wiser, Mr. Kaplan, Mr. Wapner

301 PROBLEM, THEORY, AND METHOD IN PSYCHOLOGY/ Seminar

During the first half of semester one, each faculty member meets once with the class to discuss his/her perspectives and research. Students prepare brief reports characterizing the links among each faculty member's perspective, research, problems, methods, as well as a paper summarizing or integrating all of the faculty perspectives. Students also submit a brief statement on the status of their own research. During semester two, the ethics of the research process are discussed. Students formulate proposals on their master's theses and other research. Constructive criticism of these research proposals is offered by other members of the seminar. At the end of semester two, students submit their research proposals and written reports, which cover the status of their research.

Mr. Wapner

Offered every semester

302 STATISTICAL METHODS/ Seminar

The first semester is devoted to a review of the basic concepts of statistics, such as probability, statistical inference, sampling distribution, nonparametric statistics, and regression analysis. The second semester introduces analysis of variance, covariance, and experimental design.

Ms. Wiser

Offered every year

303 PROSEMINAR IN EXPERIMENTAL PSYCHOLOGY

An introduction to psychophysics, sensory processes, theories of perception, theories of learning, memory, language, information processing, and higher mental processes, including their biological bases. Designed to give students basic concepts in classical and contemporary issues in those areas. Several faculty members conduct the class, each being responsible for the section of the course in her/his area of specialization.

Staff

Offered periodically

310 PSYCHOPATHOLOGY OF CHILDHOOD AND ADOLESCENCE/ Seminar

Focuses on the origins and course of behavioral maladaptation during the first two decades of life. Problems of assessing and treating psychological disorders are viewed from a developmental perspective, with connections being drawn

between normal and abnormal growth processes. In particular, pathological symptomology is related to developmental issues such as early biological regulation, attachment, the family context, peer relations, intellectual development, self-control, sex-role differentiation, and personal efficacy. Selected topics include: childhood depression, schizophrenia, eating disorders, borderline states, aggressive and other emotional disturbances, and learning disabilities.

Mr. Damon

Offered periodically

311 CLINICAL METHODS I/ Practicum

An introduction to clinical assessment.

Ms. Kellett, Mr. Cirillo

Offered every year

312 PSYCHOPATHOLOGY/ Seminar

An introduction to psychopathology—directly, through naturalistic observation and interviews with seriously disturbed individuals, and indirectly, through clinical and experimental reports related to description and explanation of psychopathology. A paper on some specific psychopathological phenomenon (e.g., delusions, hallucinations) is required.

Mr. Bibace

Offered every other year

315 IMITATION, INTERNALIZATION, IDENTIFICATION/ Seminar

Concerned with processes involved in self-other differentiation and the influence of significant others in the construction of the self. The writings of J.M. Baldwin, J. Piaget, G.H. Mead, A. Bandura, R. Schafer, M. Mahler, and J. Macmurray pertaining to these processes are discussed and relevant research evidence is considered.

Ms. Uzgiris

Offered every other year

316 SENSORY PROCESSES AND PSYCHOPHYSICS/ Seminar

Psychophysical concepts and methods are discussed, including magnitude estimation and multidimensional scaling. Particular attention is paid to those concepts and methods relevant to studies of taste, smell, and flavor.

Mr. Stevens

Offered periodically

317 BEHAVIOR IN INFANCY/ Seminar

Proceeds from an examination of the capacities for functioning in the neonate to a consideration of the changes in those capacities during ontogenesis with a view toward understanding the way infants organize their functioning in the world. Different topics are chosen for an in-depth examination in different years.

Ms. Uzgiris

Offered every other year

318 PIAGET'S THEORY/ Seminar

The basic concepts in Piaget's theory of development are critically studied through intensive reading of a selection of his writings. The historical roots of Piaget's concepts as well as their use by him throughout his lifetime are considered. The aim of the course is not familiarization with any particular topic studied by Piaget, but an in-depth examination of some of his theoretical ideas.

Ms. Uzgiris

Offered every other year

319 GENETIC-STRUCTURAL APPROACH TO MENTALITY/ Seminar

Devoted to demonstrating how genetic structural approaches, viz., those of Marx, Freud, Jung, Cassirer, Werner, Piaget, and others, deal with the analysis of mentality as revealed in collective and individual activity. Special emphasis on the categories basic to all genetic structural approaches.

Mr. Kaplan

Offered every other year

322 PSYCHOLOGY OF LEARNING/ Seminar

Theories, methods, and findings in the psychology of learning are discussed. Attention is given to controversial issues in discrimination learning.

Mr. Stevens

Offered periodically

323 NEUROANATOMICAL TECHNIQUES/ Laboratory

An advanced course for students wishing to pursue research in biopsychology. The course provides training in the most recent neuroanatomical techniques that are necessary to evaluate the relationship between structure and function in the central nervous system. Students are provided with laboratory skills necessary to pursue research and further graduate training in psychobiology. Prerequisite: Psychology 230 or equivalent and permission of the instructor. Limited to five or six students.

Staff

Offered periodically

324 THEORIES OF PERSONALITY I: ISSUES IN PSYCHOLOGY THEORIES/ Seminar

Covers three areas: (1) discussion of general issues in "theories" of personality, (2) further consideration of some issues in different theories (e.g., Freud), and (3) presentation and discussion of one alternative framework.

Mr. Wiener

Offered every other year

325 POLITICAL ISSUES IN NEUROSCIENCE RESEARCH/ Seminar

Explores the ethics and values of neuroscience research as well as the political aspects of policy-making in the area of science and how to use important resources in grants preparation. The seminar is open only to graduate students and requires permission of the instructor.

Mr. Stein

Offered periodically

326 ADVANCED TOPICS IN SOCIAL AND PERSONALITY DEVELOPMENT/ Seminar

Focus is on the complementary processes of socialization and individuation through the life span. The individual's modes of relating to others and of constructing the self are traced through each phase of life. Developmental connections are drawn between early social relations and later social and personal experience.

Mr. Damon

Offered every other year

327 MORAL DEVELOPMENT/ Seminar

The classical and contemporary approaches to the development of moral judgment and conduct in the individual are studied. Emphasis is on new and future directions for research in this area.

Mr. Damon

Offered periodically

328 SOCIAL COGNITION/ Seminar

Focuses on contemporary approaches to the study of social reasoning in children, adolescents, and adults. Emphasis is on the individual's developing knowledge of interpersonal relations, the self, and other persons. Recent theoretical and empirical work is considered.

Mr. Damon

Offered every other year

329 GENERAL PSYCHOLOGY FROM THE ORGANISMIC-DEVELOPMENTAL PERSPECTIVE/ Seminar

In-depth exploration of general psychology in the context of a teaching practicum. To be taken concurrently with assisting in Psychology 101, General Psychology.

Optional for students assisting in Psychology 101.

Mr. Wapner

Offered every semester

331 CLINICAL METHODS II/ Practicum

Devoted to clinical experiences primarily with children. This includes intelligence and projective testing, diagnostic interviewing, and play therapy with children.

Mr. Ciottone

Offered every year

332 THEORIES OF PSYCHOTHERAPY/ Seminar

A comparison of various theoretical approaches to psychotherapy is considered.

Mr. Wiener

Offered every other year

333 NEUROPSYCHOLOGICAL ASSESSMENT/ Seminar

An overview of the structure and function of the central nervous system is presented. Emphasis is on quantitative and qualitative analyses of standardized and experimental tests of cognitive functions useful in differential diagnosis of neurological syndromes.

Ms. Kaplan

Offered every year

335 SOCIAL EVOLUTION/ Seminar

An ongoing colloquy on the evolutionary perspective designed for graduate students in psychology, biology, and geography. Each year the participants in the seminar agree on a conceptual problem they want to explore during the sessions of the seminar. In recent years, sample problems have included the possible significances of sociobiology to contemporary psychology, neo-Lamarckian approaches to evolutionary theory, the concept of levels of analysis, and the significance of song in the social life of birds. The seminar is offered in the spring, but interested graduate students should contact the instructor during the previous fall so that topics can be decided and reading materials can be made available.

Mr. Thompson

Offered every year

338 SELF-CONCEPT AND SELF-PERCEPTION/ Seminar

An examination of research and theory on attributions to self and others and their relationship to action.

Mr. Laird

Offered every other year

339 THE EFFECTS OF EARLY EXPERIENCE/ Seminar

An examination of recent evidence pertaining to the effects of various circumstances during early ontogenesis in the course of perceptual, cognitive, and motivation development aimed at conceptualizing these effects within a coherent framework. Evidence from studies of animals and humans is considered.

Ms. Uzgoris

Offered every other year

340 EMOTION AND INTERPERSONAL RELATIONS/ Seminar

Uses our knowledge of various emotional transformations (e.g., changes in self-boundary) to develop a precise language for the description of interpersonal phenomena such as merger-separation, dynamics, identification, and the dynamics of family constellations.

Mr. deRivera

Offered every other year

342 IMAGES, CONCEPTS, AND PROTOTYPES/ Seminar

The following topics are addressed: imagery debate from philosophical (Dennet, Fodor) and psychological (Kosslyn, Pinker, Pylyshyn) points of view; relations

between imagery and perception; the dual code/abstract code controversy; and shape categorization.

Ms. Wisner

Offered periodically

343 CHEMORECEPTION/Seminar

Selected current topics in taste and smell are examined.

Mr. Stevens

Offered periodically

351 CLINICAL METHODS III/ Practicum

Practicum training in some special area, e.g., child clinical, family interactions, human neuropsychology.

Staff

Offered every semester

352 CLINICAL METHODS IV/ Practicum

Practicum training in diagnostic interviewing in the Psychological Services Center.

Mr. Baker, Mr. Cirillo

Offered every semester

353 THEORY AND PRACTICUM IN BEHAVIOR MODIFICATION/ Practicum

Mr. Peterson

Offered every year

357 SYMBOLIZATION AND SYMBOLIC ACTION/ Graduate Seminar

Focuses systematically, and in detail, on one or more of the major approaches to symbolism, symbolization, and symbolic action. The approaches, considered from time to time, include those of Freud and the psychoanalysts; that of Jung and his followers; those of philosophers, such as Ernst Cassirer and Paul Ricoeur; anthropologists such as Victor Turner, Edmund Leach, or Clifford Geertz; literary critics such as Kenneth Burke, Northrop Frye, or Frederic Jameson; semioticians such as Roland Barthes or Umberto Eco; and psychologists such as Werner and Kaplan. On the next occasion, we focus mainly on the seminal writings of Kenneth Burke, examining Burke in the context of these other approaches.

Mr. Kaplan

Offered every other year

358 SYMBOLIZATION AND SYMBOLIC ACTION/ Graduate Research Seminar

A research-oriented seminar, adapting certain approaches to issues of symbolism, symbolization, and interpretation. The emphasis in this seminar is on the articulation and execution of empirical or experimental inquiries that are theoretically and conceptually motivated. The principal approach employed will be that of genetic-dramatism, (Werner and Kaplan, Kenneth Burke) with the incorporation of certain insights derived from other major students of symbolic processes and symbolic action, e.g., Cassirer, Ricoeur, Perelman, Ong, Jakobson, Turner, Booth, Barthes, Eco. Prior participation in Psychology 357, though not required, is highly desirable.

Mr. Kaplan

Offered every other year

366 MIND AND COGNITION/ Seminar

The underlying general question in this seminar concerns the organization of mind and the development of knowledge. Topics include logic and mind, language and mind, relations between logical development and language, learnability, innateness, induction, and culture and mind. Psychological and philosophical material is discussed.

Ms. Joffe Falmagne

Offered periodically

- 380 RESEARCH IN PSYCHOLOGY/ Tutorial**
 Direction of individual students in their research.
 Staff
 Offered every semester
- 381 READINGS IN PSYCHOLOGY/ Tutorial**
 A critical analysis of literature in areas related to individual research.
 Staff
 Offered every semester
- 382 CONSULTATION IN FAMILY PRACTICE/ Practicum**
 Practicum in consultation to residents in family medicine.
 Mr. Bibace
 Offered every semester
- 383 WORKSHOP ON PROBLEMS AND ISSUES IN CLINICAL PSYCHOLOGY/ Seminar**
 Clinical Staff
 Offered every semester
- 385 PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER I/ Practicum**
 Mr. Baker
 Offered every semester
- 386 PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER II/ Practicum**
 Mr. Baker, Mr. Bibace,
 Mr. Cirillo, Mr. Wiener, Mr. Peterson
 Offered every semester
- 387 PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER III/ Practicum**
 Mr. Baker, Mr. Bibace,
 Mr. Cirillo, Mr. Wiener, Mr. Peterson
 Offered every semester
- 388 PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER IV/ Practicum**
 Mr. Baker, Mr. Bibace,
 Mr. Cirillo, Mr. Wiener, Mr. Peterson
 Offered every semester
- 389 INTERNSHIP IN PSYCHOLOGY/ Practicum**
 Staff
 Offered every semester

Russian

See Department of Foreign Languages and Literatures.

Screen Studies

See Department of Visual and Performing Arts.

Sociology

DEPARTMENT FACULTY

Ruth Harriet Jacobs, Ph.D., *chair*: gender, theory, field methods, aging

J. Peter Cordella, Ph.D.: deviance, sociology of law, social theory, social stratification

Sidney M. Peck, Ph.D.: social theory, industrial sociology, the peace movement

Robert J. Ross, Ph.D.: urban studies, political sociology, political economy, social policy

Elizabeth A. Stanko, Ph.D.: victimization of women, police-prosecutorial discretion, qualitative methodology

Shelly Tenenbaum, Ph.D.: Judaic studies, race/ethnicity, social stratification

Andrea S. Walsh, Ph.D.: aging, women's studies, popular culture/mass communications

UNDERGRADUATE PROGRAM

Sociology is the study of society and human variety: of structures, of histories, of biographies. To understand historical and social forces and their relation to individual lives is a requisite first step to acting with freedom, reason, and historical consequence in dealing with the cultural tasks of our times.

A major goal of the sociology program at Clark is to help persons attain a working knowledge of those theories, concepts, methods, and findings of sociology and related disciplines that are relevant to understanding and affecting the origins, development, maintenance, and change of social institutions and forms of social organization.

The department recognizes that not all students majoring in sociology, or taking a number of sociology courses, will want or need to obtain precisely the same kinds of experiences at Clark. To this end, the program has built in a reasonable degree of flexibility, offering the student choices both of courses within general categories and of practicum experiences.

Many sociologists study society in order to change it. As a social science faculty, our department is committed to a humanistic perspective. We are concerned about the human situation and the relevance of our scholarship to societal issues and community problems as well as to our individual lives. We hope to understand the structure and dynamics of human society, on a small or large scale, so that we can contribute to those movements of change in our society that strive to liberate us all from the oppressive conditions of exploitation, discrimination, and alienation.

Sociology is a basis for many different kinds of careers and graduate schools. Feel free to discuss your postgraduate plans with the faculty. Also, ask the department secretary for a copy of our department's handbook (revised yearly) as well as for handouts on employment opportunities and careers.

The departmental major consists of nine courses within the department and five additional related courses in other departments selected from a set of focused options; students develop their selections through close consultation with a major adviser. The nine departmental courses are to be divided as follows:

- I) At least one introductory course chosen from:
Introduction to Sociology
Sociology of Everyday Life
- II) At least one advanced theory course chosen from:
Sociological Theory: Classical
Sociological Theory: Contemporary
Topics in Sociological Theory

- III) At least one methods course chosen from:
Research on Everyday Life
The Social Research Process
- IV) At least two core courses chosen from among the following subfields of the discipline: social psychology, criminology, aging, industrial sociology, social stratification, urban sociology, women's studies.
- V) In their senior year (or in selected cases, before that) and in close consultation with their advisers, majors select one of the following options:
 Option A, *Thesis*: This is the equivalent of four full courses in sociology; it is designed for selected students who wish to devote approximately 50 percent of their senior year to a major research problem.
 Option B, *Internship*: This is the equivalent of from one to four full courses; it is designed for selected students who seek supervised field training in community or organizational settings.
 Option C, *Coursework*: For those students who do not choose any of the above options, nine sociology courses are required for the major.
 Option D, *A combination of coursework and internship experiences totalling four course units.*

VI) *Related Courses*

In close consultation with their advisers, students plan a program of additional courses that center on a coherent intellectual focus, which complements the substantive knowledge of conceptual skills of the department curriculum. Such foci will, most usually, consist of courses taken in another social science department, but they may be interdepartmental, e.g., "urban focus" could include courses in government, geography, history, and economics. The general expectation of the department is that such related course work will consist of five courses. This expectation may be higher for those who choose foci that entail taking elementary courses in preparation or as prerequisites.

GRADUATE PROGRAM

At the present time, the department is not offering advanced degrees.

COURSES

100 INTRODUCTION TO SOCIOLOGY/ *Variable format*

A general introductory course in the discipline of sociology, intended mainly for students who wish to gain a broad, general overview of the field, its areas of study, methods of inquiry, and conceptions and analyses of society. The central objective of the course is to encourage students to gain a sociological perspective on human conduct.

Mr. Ross, Mr. Cordella,
 Ms. Tenenbaum, Staff

Offered every semester

101 SOCIOLOGY OF EVERYDAY LIFE/ *Variable format*

A version of introductory sociology in which students look at the ordinary events of their past and current life history to discover the patterns that come from the complex nature of social organization, culture, and social structure.

Ms. Jacobs, Staff

Offered periodically

105 SELF AND SOCIETY/ *Lecture, Discussion*

An examination of the relationship between the individual and the social system. The theories, methods, and findings of social psychology are examined as they illuminate the major, enduring themes that confront human beings over the life cycle individually and collectively: e.g., socialization and the development of

identity, conformity, persuasion, aggression and altruism, prejudice, relationship of the individual in community.

Mr. Cordella, Ms. Jacobs,

Offered every year

Ms. Walsh, Staff

110 INTRODUCTION TO WOMEN'S STUDIES/ Lecture, Discussion

An overview of the field of women's studies, focusing on sociological, historical, psychological, and economic dimensions of the female experience. This course explores: biosocial roots of the sexual division of labor, female socialization, education, sexuality, labor force participation, family roles, aging, the future of feminism.

Ms. Walsh, Staff

Offered every year

170 THE SOCIAL RESEARCH PROCESS/ Variable format

Provides a general introduction to various methods employed in sociological research. The emphasis is on qualitative methods such as participant observation and interviews. Students learn about these methods by using them in projects of interest to them. Majors may meet the methods requirement by selecting this course, but the course is also available to nonmajors who wish to learn how to investigate social life. Selected studies in various methods are assigned reading.

Mr. Cordella, Ms. Jacobs,

Offered every year

Ms. Stanko, Staff

200 DIRECTED READINGS IN SOCIOLOGY

Offered for variable credit.

Staff

Offered every semester

201 SPECIAL PROJECT: PEACE ACTION RESEARCH

This special project focuses on the interrelationship between theory and practice in peace studies. Theoretical understanding of the international arms crisis is tested in the practice of developing community organizing approaches to peace education outreach. Readings on the historical and sociological dimensions of the escalation toward nuclear war and the rise of mass movements to prevent the outbreak of nuclear war are utilized throughout the project.

Mr. Peck

Offered every other year

202 WORCESTER COMMUNITY STUDY/ Research seminar

A field research seminar oriented to descriptive evaluation and action research on any facet of the social structure of the Worcester community. Students who wish to add a research dimension to their special projects, internships, and practica are encouraged to participate in this seminar.

Mr. Peck, Staff

Offered every other year

203 SOCIOLOGY OF JEWISH AMERICANS/ Variable format

Deals with the historical and contemporary situation of American Jews with an emphasis on community and religious organizations, socioeconomic and cultural situations, and intergroup relations. Special topics of interest to students are explored, and students do guided library or field research.

Ms. Tenenbaum, Staff

Offered periodically

209 SOCIOLOGY OF WOMEN'S WORK/ Variable format

This course explores women's work roles. Topics include the work of the housewife, the transitions of women in and out of the labor force during the life

cycle, career selection, displaced homemakers, women in corporations and professions, gender stratification, and other areas of special interest to students.

Ms. Jacobs

Offered every other year

210 WOMEN AND CRIME/ Variable format

In traditional criminology, women's role in the criminal justice system is seldom a topic of focus. The course concentrates on the role of women, as criminal offenders and as the primary targets of male offenders. We explore the traditional felony crimes such as murder, robbery, victimless crimes, prostitution; treatment of women in courts and prison; victimology, such as rape and battered wives; and women workers within the criminal justice system, such as policewomen.

Ms. Stanko

Offered every year

215 RESEARCH ON EVERYDAY LIFE/ Variable format

Examines the world of everyday life. As participants and observers, students design and conduct a research project. We explore various analytic approaches to analyzing the collected data, including dramaturgical and ethnomethodological frameworks.

Ms. Stanko, Ms. Jacobs, Staff

Offered every year

225 SOCIOLOGY OF SEX ROLES/ Variable format

The focus of the course is on the sex role socialization process and gender stratification in contemporary American society. Courtship, marriage, and divorce are discussed. Work roles are considered.

Ms. Jacobs, Staff

Offered every other year

227 FIELDWORK SEMINAR IN WOMEN'S STUDIES

This course is designed for student interns in fieldwork settings related to women's studies: family planning agencies, rape crisis centers, day care centers, etc. Fieldwork is supplemented by readings on the impact of feminism on social services and the relationship between social services and social change.

Ms. Walsh, Staff

Offered every year

239 AGING AND SOCIETY/ Lecture, Discussion

This course focuses upon the multiple realities of aging in human society. Specific attention is devoted to the history and social role of the aged in the United States. The impact of social structure upon the aged requires examination of key issues confronting the elderly such as employment, retirement, income, housing, health care, education, sexuality, and death. A variety of social programs designed for the aged are critically evaluated. (Formerly Social Gerontology.)

Ms. Walsh, Staff

Offered every year

241 SOCIOLOGY OF MEDICINE/ Variable format

Examines health and illness as social phenomena. Topics to be covered include social causes of disease, theories of individual response to illness, and the sociology of institutions that attempt to care for and cure the sick. The course also addresses problems in the health care system at the national level and explores solutions to the mounting "crisis" in the provision of health services. Useful to those with general interest, as well as students considering health-related careers.

Staff

Offered every year

242 FIELDWORK SEMINAR IN SOCIAL GERONTOLOGY

Supervised placements for students within the aging network are supplemented by appropriate readings, written assignments, and group discussion.

Ms. Walsh, Ms. Jacobs, Staff

Offered periodically

243 POLITICAL SOCIOLOGY/ Variable format

Examines structures of social class and power in relationship to stability, conflict, and change in American government. Focuses on government relationship to businesses, the economy, and other political interests and behavior. Compares the United States to other industrial countries.

Mr. Ross

Offered every other year

246 SOCIAL PLANNING AND SOCIAL POLICY/ Variable format

Introduces the field of social policy. Each semester focuses on a particular theme. Past themes include: poverty, urban planning and social policy, community planning.

Mr. Ross

Offered every other year

247 CITIES AND SUBURBS/ Variable format

Introduces urban sociology. Examines structure and development of American metropolitan areas and community power, with special attention to changing functions of city and suburb. Examines different ways of life in city and suburb.

Mr. Ross

Offered every year

248 SEMINAR IN GLOBAL CAPITALISM

Examines processes of economic and social development in two regional frameworks: changes in the structure of industrial regions of the advanced capitalist countries and changes in the structure of developing and more peripheral regions. The conceptual framework is that of a global capitalist system undergoing significant transformation in the deployment of labor and capital.

Mr. Ross

Offered every year

250 CRIMINOLOGY/ Variable format

Explores the nature of crime in society, theories about victims of crime, theories about why people commit illegal acts, and the kinds of crime that occur in American society.

Mr. Cordella, Ms. Stanko, Staff

Offered every year

251 SOCIOLOGY OF MASS COMMUNICATION/ Lecture, Discussion

Analyzes the history and development of the modern media of mass communications and explores key issues in the sociological analysis of popular culture. A variety of theoretical and methodological approaches to the sociology of mass communications is presented. Through intensive in-class analyses of film and television as cultural documents, students learn to analyze the relationship between form and content in the production of cultural meaning. This course focuses primarily on visual media; extra screening times are required.

Ms. Walsh

Offered every year

254 SOCIOLOGICAL THEORIES OF HEALTH AND ILLNESS/ Variable format

Many sociologists have analyzed health and illness behavior and the contemporary medical care system. This seminar focuses on major attempts to apply sociological theory to these phenomena. Three important theoretical models are examined in depth: structural-functionalist, symbolic interactionist, and Marxist approaches.

Staff

Offered periodically

255 THE FAMILY/ Variable format

Critical, historical, and feminist perspectives on the institutions of marriage and the family. The seminar considers comparative, historical, and other analyses of

the social role of women vis-a-vis the role relationships inherent in marital institutions.

Staff

Offered periodically

256 CLASS, STATUS, AND POWER/ Variable format

An analysis of the major dimensions of social stratification in contemporary society. Economic class, social status, power, class consciousness, social mobility, and the consequences of class difference are studied.

Mr. Peck, Ms. Tenenbaum, Staff

Offered every other year

257 CITIES IN GLOBAL PERSPECTIVE/ Variable format

There are four dimensions of comparison upon which this course is based: historical; cross-national within advanced capitalism; a cross-system of social relations, i.e., capitalist as compared to socialist urbanization; and finally, a contrast between the processes and structures of urbanization in the First and Third Worlds.

Mr. Ross

Offered every year

260 SOCIAL PSYCHOLOGY OF IDENTITY/ Variable format

Examines the concept of self or identity as it develops within the social world. Identity is approached from a life span/developmental perspective, a comparative perspective, and a social psychological perspective. The course attempts to join a theoretical with an experiential process of teaching-and-learning.

Ms. Jacobs

Offered periodically

261 CRIMINAL JUSTICE IN AMERICA/ Variable format

The criminal justice system is a complex set of roles and perspectives, traditionally viewed as an integrated unit processing individuals arrested for criminal offenses. This course is designed to view the criminal justice system as a topic for inquiry into social relations of institutions, which are studied as isolated agencies (i.e., law enforcement, court process, corrections) and as a whole, "integrated" system.

Ms. Stanko, Staff

Offered every year

263 DEVIANCE/ Variable format

This course has two fundamental objectives: (1) to introduce the student to the literature, research, and conceptual problems in the field of deviance and (2) to examine conceptual frameworks out of which contemporary definitions of deviance emerge.

Mr. Cordella, Ms. Stanko, Staff

Offered every year

265 SOCIAL MOVEMENTS/ Variable format

Discusses the general characteristics of modern social movements, with the New Left and other protests of the sixties used as extended case examples. Problems of recruitment, organization, and ideology are analyzed. The form of the course depends on the size of registration.

Mr. Ross, Staff

Offered periodically

282 INDUSTRIAL SOCIOLOGY/ Variable format

Focuses on the study of social relations in the industrial setting. The course covers the research tradition beginning with the human relations school and extending through the sociology of work and occupations. A special focus of the course is workers' organizations and the sociology of labor.

Mr. Peck, Staff

Offered every other year

290 SOCIOLOGICAL THEORY: CLASSICAL/ Variable format

Beginning with the European writings of the early sixteenth century and extending to the expression of social theory at the turn of the twentieth century, the course focuses on how certain social themes dealing with human relationships were treated by the classic works of outstanding European social philosophers and theoreticians. These social themes refer to issues of value consensus and social conflict, established power and rebellious disorder, the social person and the alienated human. Oriented to a sociology of knowledge perspective, the range of ideas—beginning with Machiavelli and More and ending with Weber and Simmel—is considered in the context of the history and social structure of national capitalism as it emerged in the specific settings of Italy, England, France, and Germany. Meets social theory requirement for majors.

Mr. Peck, Staff Offered every other year

291 SOCIOLOGICAL THEORY: CONTEMPORARY/ Variable format

Social developments in the United States during the post- World War II epoch have given rise to a variety of theoretical views in the field of sociology. Diversity of approach and fragmentation of theoretical stance are related to significant changes in social structure and political economy of the United States during the past three decades. The relationship between social theory and political ideology is considered throughout.

Mr. Peck, Staff Offered every other year

296 ADVANCED TOPICS IN CRIMINAL JUSTICE/ Variable format

Concerned with an in-depth view of the current issues in the field of criminal justice. Students are responsible for developing a project, to include on-site experience.

Ms. Stanko, Staff Offered periodically

297 TOPICS IN SOCIOLOGICAL THEORY/ Variable format

For those who have already taken classical or contemporary theory and also for those who have not done in-depth study of particular theorists but wish to do so. Meets theory requirement for majors.

Mr. Cordella, Ms. Jacobs, Mr. Ross, Staff Offered every other year

299 THESIS STUDIES

Independent study submitted for honors consideration for senior sociology majors. Students should sign up with the faculty member whose areas of interests are most suited to their own. Emphasis is upon independent research undertaken with faculty guidance and supervision. Generally requires two credits in each semester of senior year, with a thesis submitted for honors consideration.

Staff Offered every year

299.9 INTERNSHIPS IN SOCIOLOGY

Supervised field training in community and organized settings. This is the equivalent of from one to four full courses in sociology. Variable credit.

Staff Offered every semester

Spanish

See Department of Foreign Languages and Literatures.

Theater Arts

See Department of Visual and Performing Arts.

Visual and Performing Arts

Donald W. Kreuger, M.F.A., *chair*: foundation studies, drawing, painting, illustration

Clark's Department of Visual and Performing Arts is made up of individual academic programs in art history, studio art, music, screen studies, and theater. Whether students prefer to study the history, criticism, philosophy, and theory of the arts or to engage in the creative activity of studio, composition, or performance, there are courses, concentrations, and majors available. A major in a given area can be the core for a preprofessional program; or, the student may cross traditional disciplinary lines—by double majoring, for instance, or by individually designing a major or concentration that includes two or more areas of study. In consultation with the program director, students who have an interest in the arts but decide to major in other areas may develop a four or five course sequence as a concentration or “minor”. Specific major requirements for the different programs and their course descriptions are listed below under each program heading. Majors and nonmajors are welcome to participate in the department's programs and courses, and to attend its many art exhibitions, film presentations, and musical, dance, and theatrical performances.

ART

PROGRAM FACULTY

Donald W. Krueger, M.F.A., *program director*: foundation studies, drawing, painting, illustration

Sarah Buie, M.F.A.: graphic design, museum design and interpretation, textile history, design history and theory

Catherine Levesque, Ph.D.: Renaissance and Baroque art

Bonnie L. Grad, Ph.D.: nineteenth- and twentieth-century art

Rhys F. Townsend, Ph.D.: ancient art and archaeology

PART-TIME FACULTY

Jean Borgatti, Ph.D.

Elli B. Crocker, M.F.A.

Stephen DiRado, B.F.A.

Mary L. Graham, M.F.A.

Michael Hachey, M.F.A.

Leon Nigrosh, M.F.A.

Ron Rosenstock, M.A.

Jeffrey Schiff, M.F.A.

Frederick A. Simon, B.S.

Al Souza, M.F.A.

Patricia E. Woods, M.A.

ADJUNCT FACULTY

Paul Burke, Ph.D.

John Conron, Ph.D.

EMERITUS

Samuel P. Cowardin III, Ph.D.: Renaissance, oriental art

Because art reflects the trend of thought and the impact of events of its time, it relates to many other areas of study—history, philosophy, psychology, to name just a few. Study of art thus enhances one's understanding and appreciation of other disciplines. For students interested in the arts, humanities, or social and natural sciences, for majors and nonmajors alike, the study of art can provide an especially rewarding and enriching part of liberal arts education. Courses and programs in art offer opportunities to develop critical skills, acquire resources for visual thinking and communication, and engage in personal creative expression. And for both future art scholars and professionals, Clark's art programs provide a solid foundation that will serve them well in their graduate studies or careers.

For information concerning majors and courses, see the art history and studio art program entries below.

ART HISTORY AND CRITICISM

The Art History Major Program offers a meaningful liberal arts focus for students interested in art and the social, cultural, and historical context in which it is created. Majors may concentrate in areas such as ancient, Renaissance, and modern art history, or other areas of special interest. For those seriously considering teaching, museum and gallery work, arts conservation, or arts management, the major provides a solid foundation for graduate study.

Admission to the major requires a grade of at least B in *Introduction to Western Art* (or equivalent courses or superior advanced placement performance) and approval of the program faculty. Students must then complete fourteen courses: four art history courses in a single area (e.g., ancient, Renaissance, modern) including the Senior Project; four art history courses outside this area; four courses outside art, related to the area of concentration; and two studio courses. In the case of double majors, each of the four groups is reduced by one course, for a total of ten required courses.

COURSES

101 INTRODUCTION TO WESTERN ART I/ Lecture, Discussion (formerly 1101)

Surveys ancient, medieval, and early Renaissance art. The first weeks are devoted to an examination of the basic elements in the visual arts, and to certain fundamental matters of terminology and methodology, with special emphasis on those aspects to be encountered in works discussed during the semester. Selected works are then studied as exemplars of style and artistic quality in the context of the leading ideas of their respective eras.

Mr. Townsend

Offered every year

102 INTRODUCTION TO WESTERN ART II/ Lecture, Discussion (formerly 1102)

Following a review of elements and principles in the visual arts, selected works of Western art from the High Renaissance to the present are studied in historical and cultural context.

Staff

Offered every year

105 THE AEGEAN WORLD/ Lecture, Discussion

An introductory survey of architecture, sculpture, and painting in Egypt, Mesopotamia, and the Aegean during the Bronze Age, the course covers the Old and New Kingdoms of Egypt; the great dynasties of Sumer, Akkad, and Babylon; and the cultures of the Aegean islands, Crete, and mainland Greece. Examines and compares artistic forms and traditions of each region in order to shed light on the individual religious and social contexts in which they evolved and to reveal the differing conditions under which these civilizations emerged. Highlights the renowned archaeologists whose discoveries have illuminated the history and artifacts of these lands.

Mr. Townsend

Offered periodically

106 INTRODUCTION TO ARCHAEOLOGY/ Lecture, Discussion

Concentrating on the Mediterranean region, the course traces the history and methods of this discipline—emphasizing its unique combination of the sciences and the humanities—from its faltering but enthusiastic first steps to its technologically advanced state today. Selected case studies, which involve the student's active participation, will demonstrate how archaeology has illuminated the ancient world. A special concern will be the newly developed field of underwater archaeology, which has contributed so much to our understanding of the history of seafaring.

Mr. Townsend

Offered every other year

109 CLASSICAL MYTH AND THE GREEK IDEAL/ Lecture, Discussion

Investigates a select number of classical myths and the concept of the "Greek ideal" as expressed in art, both in classical Greece and Rome and in various later periods, including the twentieth century. The myths are approached from the standpoint of origin and significance, changing modes of representation, and manipulation for political purposes. The concept of the Greek ideal is also examined both as it originally developed and as it was conceived in subsequent ages. Throughout, the changing attitudes towards the classical world and the significance of the classical tradition in art and history are emphasized. Field trips to area museums.

Mr. Townsend

Offered every other year

110 ANCIENT GREEK ART AND ARCHITECTURE/ Lecture, Discussion

This intensive survey extends chronologically from the Bronze Age in the third millennium to the Hellenistic period in the first century B.C.; geographically it reaches from Greece itself westward to the Greek cities of South Italy and Sicily, and eastward to the Hellenized lands of Asia Minor, Egypt, and the Near East. Within this context, discussion includes the concept of artistic originality and stylistic development, the relationship between art and politics, and the contribution of Greek art to the subsequent history of the visual arts in the Western world. Field trips to the Worcester Art Museum and the Museum of Fine Arts in Boston.

Mr. Townsend

Offered every other year

111 ANCIENT ROMAN ART AND ARCHITECTURE

Refer to course description under Classics 111.

Mr. Burke

Offered every other year

114 ANCIENT CITIES AND SANCTUARIES/ Lecture, Discussion (formerly 161)

An introduction to the great urban and religious centers of the ancient world. The concept of the city is examined as it first evolved in the Near East and as it developed in classical Greece and Rome. Emphasis is placed both on the design

and structure of urban spaces and on factors affecting town planning. The famous ancient sanctuaries are discussed not only as areas of religious worship, but as centers of cultural activity involving theater, art, athletics, and politics. Throughout, both cities and sanctuaries are viewed in their historical setting as part of the larger civilizations which nurtured them.

Mr. Townsend

Offered every other year

120 ITALIAN RENAISSANCE ART: FIFTEENTH CENTURY/ Lecture, Discussion

Concerns art in the context of developing humanism and rationalism, mainly in Florence, but with excursions into northern Italy. The aim is to delineate the character of early Renaissance art and to distinguish its principal stylistic currents as they move toward confluence in the High Renaissance. Particular attention is given to the ideas of Alberti and some of the intellectuals in the circle of the Medici. Architecture, sculpture, and painting receive approximately equal emphasis.

Staff

Offered periodically

121 ITALIAN RENAISSANCE ART: SIXTEENTH CENTURY/ Lecture, Discussion

The great figures of High Renaissance art in Florence and Rome are the focus of the first part of the course. It tries to define, through readings and discussion, the special aesthetic qualities of this particular "classic moment", seen against the political and intellectual background. The course also must confront the difficult questions relating to the evolution of Mannerism, as well as the definition of this phenomenon. Finally, the scene shifts briefly to Venice.

Staff

Offered periodically

131 BAROQUE ART/ Lecture, Discussion

The close study of several seventeenth-century artists including Rembrandt, Rubens, Carravagio, and Bernini. Particular consideration is given to how each of these artists expresses what is generally seen as essential to Baroque art: naturalism, psychological realism, religious sensibility.

Ms. Levesque

Offered every year

140 MODERN ART: NINETEENTH CENTURY/ Lecture, Discussion

A survey of the revolutionary movements in European art from neoclassicism to postimpressionism, with special emphasis on the development of the avant-garde. Both the formal characteristics of styles and the cultural and social context from which they emerged are examined. Attention is paid to the reciprocal relationship between the visual arts: between painting and printmaking throughout the century, and painting and photography after 1845.

Ms. Grad

Offered every other year

141 IMPRESSIONISM/ Lecture, Discussion (formerly 144)

Under Napoleon III (1851-1870), Paris was physically transformed into a modern city of tree-lined, spacious boulevards, parks, landscaped squares, and public gardens. Impressionists painted not only the countryside and seaside resorts, but also the beauty and richness of this urban environment. This course explores in depth the styles of Manet, Monet, Renoir, Degas, Sisley, and Pissarro, and examines the formal and coloristic characteristics of these artists as well as the particular social, economic, and political context from which urban and rural impressionism emerged. Art 140 recommended as preparation.

Ms. Grad

Offered every other year

142 MODERNISM/ Lecture, Discussion

A study of the modern imagination as it developed in the art of Europeans and Americans from the turn of the century to World War II. Two major issues, expressed as polarities in content and form, are explored in class lectures and "modernist workshops"—on the one hand, the incorporation of the non-art object (newspapers, playing cards, hats) into the art object, as in Picasso's and Braque's cubist collages and Duchamp's readymades; on the other, the elimination of reference to the object, as in the abstract, nonrepresentational painting of Kandinsky, Malevich, and Mondrian.

Ms. Grad

Offered every other year

143 ART SINCE 1945/ Lecture, Discussion

A survey of the major movements of contemporary American and European art, including abstract expressionism, environments and happenings, pop art, minimalism, earth art, and the new realism. The increasing importance of the commercial environment, popular culture, and technology is explored as a major theme in the art of the sixties. Each student assumes the separate roles of artist, critic, and art historian—creating an object, criticizing an exhibit or work of art, and formally analyzing a museum work—as a means of coming to terms with relevant formal and critical issues.

Ms. Grad

Offered every other year

144 MODERN LANDSCAPE ART: 1750-1970/ Lecture, Discussion (formerly 148)

Traces the development of landscape painting in Europe and America from 1750 through the recent past. Focuses on both the stylistic development of this art form and the cultural and social context in which it originated and flourished. Examines historical and social factors including urbanization and the birth of modern town planning, sanitation, water supply and park design; industrialization and technology; the rise of tourism; and the "commercialization" of the landscape. Emphasizes the role of landscape in the development of twentieth-century painting.

Ms. Grad

Offered every other year

145 URBAN AND PASTORAL VISIONS IN TWENTIETH-CENTURY ART/ Lecture, Discussion (formerly 149)

This advanced seminar explores these two distinct sensibilities in twentieth-century painting and the cultural sources of such visions. At one extreme are pastoralists, who retreat to the countryside to create their landscape art in solitude; Georgia O'Keeffe and Milton Avery are among them. At the other are urbanists, such as Stuart Davis and Joseph Stella, who embrace the excitement of city life, its noise and dynamism, in their lives and art. Readings include a variety of sources outside the history of art. Prerequisite: permission of instructor.

Ms. Grad

Offered every other year

150 INTRODUCTION TO ORIENTAL ART/ Lecture, Discussion

Art in the culture of the Far East, concentrating on China and Japan.

Staff

Offered periodically

155 ART OF AFRICA, OCEANIA, AND NATIVE AMERICA/ Lecture, Discussion (formerly 102)

Focuses on the art of the Yoruba of Southern Nigeria, Northwest Coast Native Americans, and selected cultures of New Guinea. Aims to develop in the student an appreciation for the art forms, cultural settings, and distinctive aesthetic in

non-Western culture. Where possible, students will be expected to make aesthetic and stylistic judgments concerning original material.

Ms. Borgatti

Offered every year

156 ARTS OF BLACK AFRICA/ Lecture, Discussion (formerly 103)

An introduction to the major traditions of art in the western Sudan and Guinea coast, the Niger delta and equatorial forest, the southern savanna, and southern and eastern African fringe. Emphasis rests on formal, conceptual, and historical links between the cultures and art forms considered.

Ms. Borgatti

Offered periodically

181 ART AS OBJECT/ Lecture, Discussion

A study of individual works of painting and sculpture emphasizing the contribution of media, technique, and visual logic to meaning. Some consideration is given to questions of connoisseurship (attribution and condition) insofar as these factors influence what we see. A number of classes are held at the Worcester Art Museum.

Ms. Levesque

Offered periodically

183 ART CRITICISM/ Lecture, Discussion

Course examines a variety of issues dealing with the evaluation of quality in art.

Ms. Grad

Offered every other year

249 SPECIAL TOPICS: MODERN ART/ Seminar

Ms. Grad

Offered periodically

290 SENIOR PROJECT IN ART HISTORY (formerly 199)

Required of all majors in art history and criticism.

Staff

Offered every semester

2991 DIRECTED READINGS

Staff

2995 SPECIAL PROJECTS

Staff

2996 SPECIAL TOPICS

Staff

2999 INTERNSHIP

Staff

STUDIO ART

Most studio courses are available to nonmajors, special students, and students with combined or self-designed majors. Students who are interested in studio art but have decided to major in another area may, in consultation with the program director, develop a four or five course sequence as a concentration or "minor" in areas such as graphic design or photography, among others. Certain studio courses satisfy the *aesthetic perspective* of the Program of Liberal Studies. Internships in art studios, advertising agencies, communications and arts agencies, museums, and galleries are available.

Throughout the year, the art program presents exhibitions of work by contemporary artists as well as work by students. The Craft Studio in the Student Activities Center offers opportunities for extracurricular involvement in arts and crafts activities.

The Studio Art Major Programs are designed to meet a number of student needs and interests: preprofessional preparation for graduate study and/or professional careers in art, design, art education, arts management, art therapy, and other arts-related fields; the satisfaction of personal interest in art and design; and significant involvement in the creative process.

THE BACHELOR OF FINE ARTS DEGREE PROGRAM

For students with a strong interest in art and design and a serious commitment to intensive study during their college careers. It is a preprofessional program within a liberal arts context, which provides resources for future career decisions and directions. It involves investigation of alternatives: graphic design, photography, painting, illustration, etc., within the studio program and in the arts, the humanities, and the social and physical sciences. Admission to the program is selective, and students are expected to maintain a professional level in their studio work as well as a high academic average. A strong advising program assists students in curriculum planning, identifying areas of major interest, and preparing for graduate study or a career. Areas of concentration include drawing and painting, graphic design, illustration, photography, printmaking, sculpture/ceramic design, and screen production. Required for the B.F.A.: 16 studio courses including four Foundation Studies, at least one Senior Studio, and the Senior Thesis. In addition, two art history courses and two nonstudio courses from the Department of Visual and Performing Arts are required.

THE BACHELOR OF ARTS DEGREE PROGRAM

For students who see art as a part of liberal education or those who may be undecided about professional interest and commitment. The B.A. program can accommodate interest in art education, art therapy, medical illustration, arts management, film and video, theater design, or individually designed or double majors. Required for the B.A.: ten studio courses including two Foundation Studies; two art history courses; and two nonstudio courses from the Department of Visual and Performing Arts. (No more than twelve studio courses will be counted toward graduation.)

NOTE: Certain studio courses are offered only when students have completed the necessary prerequisites; therefore, unless otherwise indicated, they are not offered on a regular basis. Some, but not necessarily all, of these courses will be offered during 1986-87 and 1987-88. At the discretion of the program director, certain studio courses may be repeated for credit. In addition to the prerequisites listed below, many courses require permission of the instructor and/or program director. Please refer to the semester course schedule.

COURSES

100 TWO-DIMENSIONAL DESIGN AND COLOR/ Studio, Lecture, Discussion (Foundation)

An introduction to visual language and the creative process; a foundation for future studio work and/or original creative thought and action. Problems in figure-ground, color relationships, and two-dimensional pattern and form. Open to nonmajors.

Mr. Krueger, Ms. Graham, Mr. Hachey, Staff

Offered every year

101 THREE-DIMENSIONAL DESIGN AND SPACE/ Studio, Lecture, Discussion (Foundation)

An introduction to visual language through study of space and plastic illusion, and basic three-dimensional structural principles and forms. 100 is not a prerequisite. Open to nonmajors.

Mr. Krueger, Ms. Graham, Mr. Hachey, Staff

Offered every year

102 BASIC DRAWING/ Studio, Lecture, Discussion (Foundation)

An investigation, through graphic re-presentation of the subjective aspects of visual language, of contemporary concepts of drawing, and basic concepts of space and picture plane. Formerly *Visual Studies-Drawing*. Open to nonmajors.

Mr. Krueger, Ms. Graham, Mr. Hachey, Staff

Offered every year

103 VISUAL STUDIES/ Studio, Lecture, Discussion (Foundation)

A consideration, primarily through drawing, of contemporary attitudes and modes of visual thinking and creative expression. Collage and elementary painting problems may be introduced at the discretion of the instructor. 102 is not a prerequisite. Formerly *Visual Studies-Painting*. Open to nonmajors.

Mr. Krueger, Ms. Graham, Mr. Hachey, Staff

Offered every year

120 PHOTOGRAPHY—THE ZONE SYSTEM/ Studio, Lecture, Discussion

An introduction to the art and craft of black-and-white photography emphasizing the zone system and including camera operation, developing, printing, and finishing techniques. Students must have a variable setting 35mm or 2-1/4 x 2-1/4 camera with a built-in or hand-held exposure meter, tripod, and cable release, and must provide their own film and paper. Open to nonmajors.

Mr. Rosenstock, Mr. DiRado

Offered every year

121 PHOTOGRAPHY—INTERMEDIATE/ Studio, Lecture, Discussion

Continuing the refinement of photographic seeing and darkroom techniques. Considers contemporary modes of photography and emphasizes development of personal vision. Prerequisite: 120 or acceptable portfolio. Formerly *Photography*. Open to nonmajors.

Mr. Rosenstock, Mr. DiRado, Staff

Offered every year

124 INTRODUCTION TO GRAPHIC DESIGN/ Studio, Lecture, Discussion

Introduces the process of solving communication problems through the synthesis of verbal and visual information. Discussion of design forms (book, poster, brochure, sign, map, exhibition) from historical and aesthetic viewpoints; introduction to selected media (typography, drawn and photographed images, color) through studio exercises and applied problems. Open to nonmajors.

Ms. Buie

Offered every year

125 GRAPHIC DESIGN PROJECTS/ Studio, Lecture, Discussion

Intermediate level projects in graphic design. Open to nonmajors. Prerequisite: 124 or permission of instructor.

Ms. Buie

Offered every year

128 DRAWING/ Studio, Lecture, Discussion

The study of drawing with emphasis on the nature of drawing as opposed to the representation of nature—an analytical approach using object, figure, landscape, and imaginative imagery. Open to nonmajors.

Ms. Crocker, Staff

Offered every year

129 DRAWING STUDIES/ Studio, Lecture, Discussion

A continuation of the study of drawing as graphic representation and expression using both figurative and non-figurative imagery. 102 or 128 are recommended as preparation.

Ms. Crocker, Staff

132 DRAWING AND PAINTING/ Studio, Lecture, Discussion

An introductory course investigating material and subject possibilities and beginning, through drawing and painting, a process of artistic experimentation and self-examination. Individual and group critiques, discussions, and experimentation with contemporary painting idioms. Open to nonmajors.

Ms. Crocker, Mr. Souza, Staff

Offered every year

133 PAINTING/ Studio, Lecture, Discussion

A continuation of the study of painting with increasing emphasis on individual development and direction. 103 or 132 recommended as preparation. Open to nonmajors.

Ms. Crocker, Mr. Souza, Staff

136 INTRODUCTION TO SCULPTURE/ Studio, Lecture, Discussion

Introduces the ideas and materials of three-dimensional form and investigates contemporary aspects of sculptural expression. Open to nonmajors. Formerly *Structure and Spaces*.

Mr. Schiff

Offered every year

137 SCULPTURE PROJECTS/ Studio, Lecture, Discussion

An intermediate-level course leading to the development of personal direction and expression in three-dimensional form. Open to nonmajors. Prerequisite: 136 or permission of instructor.

Mr. Schiff

150 INTRODUCTION TO CERAMIC DESIGN/ Studio, Lecture, Discussion

An exploration of three-dimensional form, using clay as a plastic medium. Emphasis is on developing an awareness of sculptural form and formal interrelationships in nature, art, and architecture. Open to nonmajors. 101 recommended as preparation.

Mr. Nigrosh

154 CERAMIC DESIGN PROJECTS/ Studio, Lecture, Discussion

Intermediate work in clay design in relation to individual technical and stylistic development. Emphasis is on sculptural—including architectural—design rather than utilitarian function. Open to nonmajors. Prerequisite: 150 and/or permission of instructor.

Mr. Nigrosh

158 INTRODUCTION TO PRINTMAKING/ Studio, Lecture, Discussion

Introduces the technique and aesthetic of intaglio printmaking—etching, dry-point, aquatint, and engraving. Open to nonmajors. At intervals the course may include an introduction to lithographic printing processes. Introductory drawing course(s) and/or previous drawing experience recommended as preparation.

Ms. Woods

Offered every year

162 PRINTMAKING PROJECTS/ Studio, Lecture, Discussion

Intermediate problem-solving in printmaking media—individual projects to be

determined by student's interest and skills. Open to nonmajors. Prerequisite: 158 and/or permission of instructor.
Ms. Woods

166 SCREEN PRODUCTION—FILM/ Studio, Lecture, Discussion

An introductory workshop in Super-8mm film production. Students will be expected to complete a specific number of films of varied content. Open to nonmajors.
Staff

167 SCREEN PRODUCTION—VIDEO/ Studio, Lecture, Discussion

An introductory workshop in seeing and thinking in electronic imaging techniques and processes. Open to nonmajors.
Mr. Simon

170 SCREEN PRODUCTION PROJECTS—FILM/ Studio, Lecture, Discussion

Intermediate individual and/or group work in film. Prerequisite: appropriate screen production courses and/or permission of instructor.
Staff

171 SCREEN PRODUCTION PROJECTS—VIDEO/ Studio, Lecture, Discussion

Intermediate individual and/or group work in video. Prerequisite: appropriate video production course(s) and permission of instructor.
Mr. Simon, Staff

174 CONTEMPORARY DIRECTIONS/ Studio, Lecture, Discussion

An intermediate-level course. Experiential examination of current movements, directions, styles, and attitudes in art. Open to nonmajors. Prerequisite: appropriate introductory courses and permission of instructor.
Staff

178 ARCHITECTURE AND SPACES/ Studio, Lecture, Discussion

Focuses on structures in the natural and built environment. Problems related to the synthesis of cultural, creative, and environmental factors as well as sculptural interpretations. Open to nonmajors.
Mr. Schiff

182 BASIC TECHNICAL THEATER

See listing under Theater Arts 120.
Ms. Kurki

Offered every year

183 TECHNICAL THEATER II

See listing under Theater Arts 122.
Ms. Kurki

Offered every year

184 DESIGN FOR PERFORMANCE

See listing under Theater Arts 123.
Ms. Kurki

Offered every year

200 PHOTOGRAPHY PROJECTS/ Studio, Lecture, Discussion

Continues the study of the techniques and aesthetics of black and white photography. Students have the opportunity to pursue individual photographic projects in the size and format of their choice. Open to nonmajors. Prerequisite:

120 and/or 121 and permission of instructor.

Mr. Rosenstock, Staff

Offered every year

204 PHOTOGRAPHIC STUDIES/ Studio, Lecture, Discussion

An intermediate/advanced workshop for students who have demonstrated competence in black and white photography. Semester topics may include color photography or alternative, non-silver photographic techniques. Open to non-majors. May be repeated for additional credit. Prerequisite: introductory or intermediate photography courses and permission of instructor. Formerly *Color Photography*.

Staff

208 TYPOGRAPHY/ Studio, Lecture, Discussion

Study of typographic art through studio exercises and applied problems which deal with the organizational and expressive natures of type. Prerequisite: 124, 125, and permission of instructor.

Ms. Buie

Offered every year

218 DRAWING AND PAINTING PROJECTS/ Studio, Lecture, Discussion

A continuation of drawing and painting processes and concepts for the intermediate/advanced level student, with emphasis on the search for individual direction and statement. Prerequisite: appropriate drawing and painting courses and permission of instructor.

Ms. Crocker, Mr. Souza, Staff

Offered every year

224 DRAWING—REALIST MODE/ Studio, Lecture, Discussion

Intermediate/advanced level course focusing on representational drawing and painting. Applicable for students interested in illustration. Prerequisite: appropriate drawing and painting courses and permission of instructor.

Staff

234 STUDIO TOPICS/ Studio, Lecture, Discussion

An advanced course. Students from all studio disciplines develop their work in response to thematic issues presented through readings and discussions. Themes change with each semester offering. Satisfies Senior Studio course requirement, and may be repeated for credit.

Mr. Schiff, Staff

Offered every year

250 PHOTOGRAPHY STUDIO/ Studio, Discussion

Advanced, professionally oriented, individual photographic study. Satisfies Senior Studio requirement, and may be repeated for credit. Prerequisite: appropriate intermediate and advanced courses and permission of instructor.

Staff

Offered every year

254 GRAPHIC DESIGN STUDIO/ Studio, Lecture, Discussion

Advanced problems in graphic design. Satisfies Senior Studio requirement, and may be repeated for credit. Prerequisite: 124, 125, and permission of instructor.

Ms. Buie

Offered every year

256 SEMINAR IN CARTOGRAPHIC DESIGN

See listing under Geography 274. Satisfies Senior Studio requirement.

258 DRAWING AND PAINTING STUDIO/ Studio, Discussion

Advanced, professionally oriented, individual drawing and painting study. Satisfies Senior Studio requirement, and may be repeated for credit. Prerequisite:

appropriate intermediate/advanced drawing and painting courses and permission of instructor.

Staff

Offered every year

262 ILLUSTRATION STUDIO/ Studio, Discussion

Advanced, professionally oriented projects in contemporary editorial, book, magazine, and advertising illustration. Satisfies Senior Studio requirement, and may be repeated for credit. Prerequisite: appropriate intermediate/advanced drawing and painting (and or photography) courses and permission of instructor.

Mr. Krueger

Offered every year

266 SCULPTURE STUDIO/ Studio, Discussion

Advanced, professionally oriented, individual study of sculpture, and spatial and three-dimensional design. Satisfies Senior Studio requirement, and may be repeated for credit. Prerequisite: 136, 137, and permission of instructor.

Mr. Schiff

Offered every year

270 PRINTMAKING STUDIO/ Studio, Discussion

Advanced individual study in printmaking. Satisfies Senior Studio requirement, and may be repeated for credit. Prerequisite: 158, 162, and permission of instructor.

Ms. Woods

Offered every year

278 SCREEN PRODUCTION STUDIO/ Studio, Discussion

Advanced individual projects in video and or film production. Satisfies Senior Studio requirement, and may be repeated for credit. Prerequisite: appropriate intermediate level screen production courses and permission of instructor.

Staff

Offered every year

280 SENIOR STUDIO/ Studio, Discussion

Designation for advanced, preprofessional, independent work under faculty supervision, in one of the studio media. Satisfies Senior Studio requirement, and may be repeated for credit. Prerequisite: appropriate advanced courses and permission of instructor.

Staff

Offered every year

289 SENIOR THESIS

Required of all B.F.A. students for graduation; optional for B.A. studio art majors. The development of a body of preprofessional work to be presented to the faculty with oral and written thesis support. Satisfies Senior Studio requirement.

Staff

Offered every year

2995 SPECIAL PROJECT

Staff

2999 INTERNSHIP

Staff

MUSIC

PROGRAM FACULTY

Gerald R. Castonguay, Ph.D., *program director*: musicology

Wesley M. Fuller, M.Mus.: theory, composition, electronic and computer music

Relly Raffman, M.A.: theory, composition, jazz studies

PART-TIME FACULTY

Betsy Burleigh, M.Mus.: conducting

Karen Lykes, M.Mus.: voice

Rita LaPlante, M.L.A.: piano

Jacques L. Linder, M.Mus.: piano, clarinet

Robert Manero, B.A.: violin, conducting

Suzanne E. Stumpf, B.A.: flute

Allan Mueller, B.S.G.S.: jazz studies, jazz piano

Robert Paul Sullivan: guitar

ADJUNCT FACULTY

Hartmut Kaiser, Ph.D.

The music program offers a preprofessional course of study for the music major and courses and activities for the nonmajor. Courses are designed to teach students to listen to music intelligently, to develop musical perception, to master basic skills of music and apply them creatively, and to acquaint students with representative works from various periods of music history. The study of music can open new perspectives on many aspects of culture and society, and the program stresses the advantages of combining professional musical development with the humanistic breadth offered by a strong liberal education.

Courses are open to majors as well as nonmajors, and assignments are designed to suit the different goals and backgrounds of the students in each category.

THE MUSIC MAJOR: THEORY, COMPOSITION, OR HISTORY CONCENTRATION

Requirements:

—Theory: 120, 121, 122, 123, 124, 125

—Music History: 11, 12, 13, 14, 15, 16

—Private Study: 18 [Four semesters of private instruction taken after completion of Music 120 or equivalent]

—Performing Groups: a minimum of four semesters in 107, 117, 127, 130, or 137

—Related areas: a full course in aesthetics, art, theater arts, or screen studies

—A minimum skills test, including sight-singing and dictation at a level of proficiency necessary for successfully pursuing the major, must be passed during the sophomore year. A keyboard proficiency test must be passed during the junior year.

The theory, composition, or history concentration requires individual tutorial work in the area of emphasis, usually undertaken only in the senior year. The major culminates in one of several types of final projects, such as papers in historical research, theoretical studies, and compositions (including the area of electronic music). The four semesters of private lesson fees in these three concentrations are covered by regular tuition payment.

THE MUSIC MAJOR: PERFORMANCE CONCENTRATION

Requirements:

- Private Study: 18 [A minimum of six semesters taken after completion of Music 120 or equivalent]
- Theory: 120, 121, 123, 124, 125
- Music History: 12, 13, 14, 15, 16
- Performing Groups: a minimum of four semesters in 107, 117, 127, 130, or 137
- Related areas: a full course in aesthetics, art, theater arts, or screen studies
- A minimum skills test, including sight-singing and dictation at a level of proficiency necessary for successfully pursuing the major, must be passed during the sophomore year.

For the performance concentration, private lessons are taken throughout the major program. Any entering prospective performance concentration music major must request an audition and assessment of his/her potential regarding the performance concentration. Formal admission into the performance concentration requires a second audition at the start of the sophomore year. The performance concentration culminates with a senior recital and a seminar dealing with stylistic analysis of the music to be performed in the recital. At least four appearances in student recitals, including a half-recital during the junior year, precede the senior recital. The lesson fee in the performance concentration is covered by regular tuition payment during the sophomore through senior years. It is strongly urged that *Basic Skills I and II* (Music 120 and 121) be successfully completed by the end of the sophomore year.

SPECIAL PROGRAMS

Concentration (or "minor") in music: The concentration (or "minor") in music is intended for students with an interest in music but whose major lies in another discipline. Requirements:

- Music 10
- Music 120
- Music 121
- Three additional courses in music. These may include Music 18 (*Private Instruction*; for information on tuition coverage see Music 18 description).

Concentration (or "minor") in special areas: This music minor centers on a core of studies in one of several special areas. Open to nonmajors. Prerequisite: Music 10, 120 *Program in Electronic Music*: Music 140, 141, 90; *Program in Jazz Studies*: Music 132, 131, 133; *Music Criticism*: three from Music 17, 113, 114, 115, 135.

Preprofessional programs: Students interested in professions such as music therapy, concert management, or music education may incorporate music courses with appropriate courses from other disciplines in an individually-designed major. The requirements for such preprofessional programs are jointly determined by the student and an advisory committee made up of one music faculty member (who serves as chair), and two faculty members from other disciplines.

Although the music program does not offer specific courses in music education, music majors interested in music education may take courses in music curriculum and practice teaching through the Education Department.

NONMAJORS:

All of the courses, seminars, and activities in the music program are open to qualified nonmajors.

Performing Organizations: Nonmajors and majors may audition for a variety of organizations, including the Clark Concert Choir, the Worcester Consortium Orchestra, Instrumental Chamber Ensembles, and the Jazz Workshop.

Private Lessons for majors and nonmajors are offered with or without credit in several areas. See Music 18 course description.

Placement Test: Prospective students considering a music major are urged to contact the program director to arrange for a placement test, which may be administered through Clark or through an authorized person at the student's current place of study. Although not required, this test enables the faculty to assess the student's present musical development and offer more informed advice. In some cases, it is possible to offer advanced theory placement as a result of the test.

Auditions: Students who wish to follow a performance concentration should arrange for an audition by contacting the program director.

INTRODUCTORY COURSE

10 INTRODUCTION TO MUSIC/ *Lecture, Discussion*

Designed for the nonmajor, the goal of the course is to expand the concept of the musical experience and to develop discriminating listeners. Taught jointly by several faculty members, it also provides an introduction to the music program. The course includes an introduction to principles of rhythm, pitch, timbre (and their notations); the principles of structure; the aesthetics of music; specific forms including fugue, sonata form, variations, etc.; and selected historical styles.

Staff

Offered every semester

MUSIC HISTORY

11 MEDIEVAL AND RENAISSANCE PERIODS/ *Lecture, Discussion*

Beginning with early Christian chant, this survey includes a study of the medieval song and motet, and the growth of polyphonic secular and sacred music extending through the sixteenth century, culminating with the study of the Renaissance mass and madrigal. When possible, works are performed in class, and scores are used for the majority of works studied.

Mr. Castonguay

Offered every other year

12 BAROQUE PERIOD/ *Lecture, Discussion*

A survey of music from 1600 to 1750, the course deals with the origins and growth of vocal and instrumental genres (opera, oratorio, cantata, sonata, concerto, etc.) and the wide variety of formal types closing with the works of Bach and Handel. When possible, works are performed in class, and scores are used for works studied.

Mr. Castonguay

Offered every other year

13 CLASSICAL PERIOD/ *Lecture, Discussion*

This survey of music from the 1720s to the early decades of the nineteenth century focuses on the Italian, French, and Viennese styles. Special emphasis is given to the music of Haydn, Mozart, and Beethoven and the important musical genres of chamber music, symphony, and opera.

Mr. Castonguay

Offered every other year

14 ROMANTIC PERIOD/ *Lecture, Discussion*

Surveys the music of the major composers of the nineteenth century. The musical style and selected works of Schubert, Mendelssohn, Schumann, Chopin, Brahms, Tchaikovsky, Wagner, and others are studied and placed within the literary and artistic setting of nineteenth-century society.

Mr. Castonguay

Offered every other year

15 TWENTIETH-CENTURY MUSIC I/ Lecture, Discussion

A survey of early twentieth-century masterworks. Representative composers include: Debussy, Ravel, Prokofiev, Stravinsky, Bartok, Hindemith, Schoenberg, Berg, and Webern. Prerequisite: 10 or 120.

Mr. Raffman

Offered every other year

16 TWENTIETH-CENTURY MUSIC II/ Lecture, Tutorial

A study of important works composed primarily since 1950. Composers include Stravinsky, Cage, Carter, Boulez, Messiaen, Stockhausen, and others. Prerequisite: 10 or 120.

Mr. Fuller

Offered every other year

17 THE MUSIC OF JOHANNES BRAHMS/ Lecture, Seminar

The course considers Brahms as man and musician in the latter half of nineteenth-century Vienna, and surveys his chamber and orchestral music, lieder, and keyboard works. Whenever possible, works will be performed live in class.

Mr. Castonguay

Offered periodically

19 WORLD MUSIC/ Lecture, Seminar

Students study and listen to the differences and likenesses in music from a wide variety of cultures and consider the ways in which music, ranging from classical art music to music for work and communal celebration, functions within cultures. Musics of India, Africa, Japan, China, and Iran are some of the recurring areas. Guest performers of ethnic music are part of the course.

Mr. Fuller

Offered every other year

20 CHAMBER MUSIC/ Lecture, Seminar

A survey of selected works of the major composers in the field of chamber music from Haydn to Stravinsky. Trips to concerts in the surrounding area are made whenever feasible.

Mr. Castonguay

Offered periodically

113 J.S. BACH AND HIS MUSIC/ Lecture, Seminar

Investigates the social, historic, and cultural setting of Bach's era, and encompasses study of his music, including the early cantatas and organ works, the instrumental music from his Cothen period, and, finally, the mature cantatas of his Leipzig years. When possible, works are performed in class and scores are provided for the majority of works studied.

Mr. Castonguay

Offered every other year

114 BEETHOVEN: THE MAN AND HIS MUSIC/ Lecture, Seminar

Explores the social and historical background of Beethoven's Vienna and centers on the study of selected works from the important genres (symphony, chamber music, and sonata) throughout Beethoven's career.

Mr. Castonguay

Offered every other year

115 AMADEUS: THE LIFE AND MUSIC OF W.A. MOZART/ Lecture, Seminar

Explores the music and life of Mozart from his early years as a child prodigy to his mature years as an outstanding genius and struggling artist in Vienna. Studies will include selected masterworks from his symphonies, piano concertos, operas, piano sonatas, and chamber music.

Mr. Castonguay

Offered periodically

118 SENIOR TUTORIAL IN MUSIC HISTORY

For majors only. Full course. Prerequisite: permission of instructor.

Staff

Offered every semester

With permission of the program director, the following courses offered by other departments may be taken for music history, criticism, and theory credit.

German 168 MUSIC IN GERMAN LITERATURE AND THOUGHT

See listing under Foreign Languages and Literatures.

German 197 THE FAUST THEME IN LITERATURE AND MUSIC

See listing under Foreign Languages and Literatures.

MUSIC THEORY

120 BASIC SKILLS I/ Lecture, Tutorial, Lab

This beginning course in the fundamentals of music requires no previous musical training. Students learn to understand, hear, recreate, and write the basic elements of the pitch and rhythmic notation system, including scales, keys, and elementary melodic and harmonic organization. Skill training begun in this course enables the student to pursue more successfully private instrumental or vocal instruction, and to begin work in composing and arranging.

Mr. Fuller

Offered every year

121 BASIC SKILLS II/ Lecture, Tutorial, Lab

Continuation of *Basic Skills I*. A study of basic tonal harmony through the secondary dominant. Small form composition and analysis in the various textures: homophony (chorale), monody (melody plus accompaniment), and two-voice counterpoint. Eartraining and musicianship lab weekly.

Mr. Raffman

Offered every year

123 THEORY: EIGHTEENTH-CENTURY COUNTERPOINT/ Lecture,

Tutorial Compositional and analytical problems in the eighteenth-century contrapuntal idiom, two- and three-part inventions, canon, and fugue. The thoroughbass practice of the seventeenth- and eighteenth-centuries is explored. Final project: the composition of a three- or four-voice fugue. Prerequisite: 121.

Mr. Raffman

Offered every other year

124 THEORY: NINETEENTH-CENTURY PRACTICE/ Lecture, Tutorial

Deals with problems in analysis, composition, and orchestration in the chromatic style of the nineteenth century. Works of Beethoven, Chopin, Schumann, Wagner, and Brahms are analyzed and used as compositional models. The harmonic language of impressionism, with its emphasis on scalar control, also is examined. Prerequisite: 121.

Mr. Raffman

Offered every other year

125 THEORY: TWENTIETH-CENTURY PRACTICE

Compositional techniques of major twentieth-century composers are analyzed and used as a basis for compositional assignments. Prerequisite: 124 or permission of instructor.

Mr. Fuller

Offered every other year

128 SENIOR TUTORIAL IN COMPOSITION

For majors only. Full course. Prerequisite: permission of instructor.

Staff

131 JAZZ THEORY/ Lecture, Tutorial

Includes a study of the rhythmic/harmonic/melodic structures of jazz, the scalar basis of improvisation, and voicing practice as it pertains to scoring for small and large ensembles. Prerequisite: 120 or passing of placement examination in rudiments.

Mr. Raffman

Offered every other year

133 TUTORIAL IN JAZZ COMPOSITION

The student writes original scores for performance by workshop ensemble. Prerequisite: 131 and permission of instructor.

Mr. Raffman

Offered every year

138 SENIOR TUTORIAL IN THEORY

For majors only. Full course. Prerequisite: permission of instructor.
Staff

SPECIAL OFFERINGS**90 DIRECTED STUDIES IN ELECTRONIC MUSIC/ Studio, Lecture, Discussion**

Advanced work in any of the main areas of electronic music: composition, hardware or software design, psychoacoustics. Work may center on either analog (synthesizer) or computer music. Resources of the Tri-College Electronic Music Program are made available to students. Prerequisite: 140 or permission of instructor.

Mr. Fuller

Offered every year

135 MUSIC AND SOCIETY/ Seminar

Studies the effects that institutions, whether governmental, religious, economic, or sociomusical, have upon the artistic and personal life of the composer. Projects focus on periods and composers decided upon by the students and the instructor. Nonmajors and majors welcome.

Mr. Castonguay

Offered periodically

140 INTRODUCTION TO ELECTRONIC MUSIC/ Studio, Lecture, Discussion

Explores electronic music as a natural, historical, and artistic result of twentieth-century musical and technological achievements. A group of important musical works is studied. Directed work in the analog synthesizer studios is a major component. Team-taught by two composers and a physicist.

Mr. Fuller, and faculty members of the
Tri-College Group for Electronic Music

Offered every year

141 SOUND INVENTION WORKSHOP/ELECTRONIC

A studio workshop that instructs students in the use of the Clark Electronic Music Studio's sound making and processing equipment. Members of the workshop acquire basic skills of synthesizer use, taping, and mixing, and develop a personalized project, such as a soundtrack for a film or videotape, a tape music composition, music for a theatrical event, or sounds for visual installations. Prerequisite: permission of instructor.

Mr. Fuller

Offered periodically

2991 DIRECTED READINGS**2995 SPECIAL PROJECTS****2996 SPECIAL TOPICS****2999 INTERNSHIP**

PERFORMANCE COURSES

18 PRIVATE INSTRUCTION IN INSTRUMENTS AND VOICE

Areas offered include: piano (Ms. LaPlante, Mr. Linder), jazz piano (Mr. Mueller), voice (Ms. Lykes), clarinet (Mr. Linder), flute (Ms. Stumpf), classical guitar (Mr. Sullivan), violin (Mr. Manero), and conducting (Mr. Manero, Ms. Burleigh). Lessons may be taken for credit or noncredit. Maximum number of credits and tuition coverage:

—Majors in theory, composition, or history emphasis: four credits covered by tuition

—Majors in the performance concentration: six credits covered by tuition

—Music Concentration or "minor": three credits covered by tuition

—Nonmajors: three credits not covered by tuition. All students must satisfy the Music 120 or equivalent requirement before taking lessons for credit. Lessons taken for noncredit require no prerequisite, and the fee is not covered by tuition.

Staff

Offered every semester

130 JAZZ WORKSHOP/ Rehearsal, Performance

Includes ensemble performance practice with weekly rehearsals through the year. An audition is required. Credit is possible for those concurrently enrolled in, or having previously passed, 131. Maximum transcript credit allowed is one full course; offered as a half course.

Mr. Raffman and Mr. Mueller

Offered every semester

134 CHORAL MUSIC AND CONDUCTING/ Lecture, Tutorial

Styles of choral music from different periods are studied with the aid of scores and recordings. Students learn basic choral conducting techniques. Prerequisite: 121 or permission of instructor.

Staff

Offered periodically

148 SENIOR TUTORIAL FOR PERFORMANCE CONCENTRATION

Majors concentrating in performance analyze historically and theoretically the music they will perform on their senior recital. A term paper is required.

Staff

Offered every semester

The following musical activities are open to all undergraduate and graduate students. Auditions are held during the first week of Semester 1. Although no credit is awarded, the transcript of any undergraduate who completes the assigned performance requirements will include a listing of the particular activity for which he or she was registered.

107 CHAMBER MUSIC ENSEMBLES/ Rehearsal, Performance

The number of small ensembles is determined by the performing talent in a given year. Admission is by audition.

Staff

Offered every semester

117 CLARK CHAMBER CHORUS/ Rehearsal, Performance

This is a small, specialized singing group chosen by the conductor from the larger Clark Concert Choir. Admission is by audition.

Ms. Burleigh

Offered every semester

127 CLARK CONCERT CHOIR/ Rehearsal, Performance

A chorus of 40 to 50 voices, the choir presents two major concerts each year on the Clark campus as well as off-campus appearances.

Ms. Burleigh

Offered every semester

137 WORCESTER CONSORTIUM ORCHESTRA/ Rehearsal, Performance

Made up of students from various consortium institutions and instrumentalists from the community, the orchestra presents two major concerts each year. Admission is by audition.

Mr. Manero

Offered every semester

SCREEN STUDIES

PROGRAM FACULTY

Philip Rosen, Ph.D., *program director*: screen theory and criticism, screen history

ADJUNCT FACULTY

Marcia Butzel, Ph.D.: French cinema, Italian cinema, screen theory and criticism

Marvin A. D'Lugo, Ph.D.: Spanish and Latin American cinema

James P. Elliot, Ph.D.: film and literature

Walter Schatzberg, Ph.D.: German cinema

Michael K. Spingler, Ph.D.: French cinema

Andrea Walsh, Ph.D.: sociology of mass communications

UNDERGRADUATE PROGRAM

The Screen Studies Program deals with arts and artifacts of the moving two-dimensional image, usually combined with sound; it is concerned, in other words, with the study of film, broadcast television, and other forms of video. Courses—in screen history, theory, and criticism—all include viewing, discussion, and analysis of film and/or video.

The program stresses the importance of a liberal arts background, for the screen arts touch upon and are affected by all sectors of contemporary culture and society. They can relate directly not only to the visual arts, drama, literature, and aesthetics, but also to diverse disciplines such as sociology, psychology, history, and economics.

Students take screen studies courses for many different reasons: to acquire knowledge that relates to their interests in other disciplines, to gain a better understanding of the roles film and television play in their everyday lives, or to understand the importance of the screen media as cultural and artistic forms.

Students planning careers in the screen arts or related areas usually major in screen studies. In addition to being of special benefit for those planning graduate study or a career in the communications fields, the major also may be of interest to those seeking a liberal arts education that speaks directly to questions of contemporary life, culture, and the arts.

Students interested in film and video production may take the Studio Art Program's production courses and/or gain production experience through professional internships.

Requirements for the Screen Studies Major:

1. A minimum of 10 courses in screen, including
 - a. 101, *Introduction to Screen Studies* (to be taken as early as possible).
 - b. At least three screen history courses, including a minimum of two of the following: 120, *History of American Narrative Film*; 121, *Survey of International Film Movements*; 122, *History of Broadcasting and Television*.
 - c. At least one screen theory course (usually 231, *Film Theory* or 232, *Television Theory and Criticism*).

- d. An advanced topics course resulting in a major term paper. (Usually 290, *Advanced Problems in Screen Studies*, or 2995, *Special Project*, when the latter results in original research or intensive critical analysis or intensive theoretical reading and analysis).
 - e. One practicum course, normally Studio Art 166, *Screen Production—Film* or Studio Art 167, *Screen Production—Video*. No more than two practicum courses may count toward the minimum of ten screen courses required for the major. (If students do take additional practicum courses, they will count toward graduation, but not toward the major.)
2. Demonstrated competence in an outside area pertinent to the student's particular emphasis in screen studies. The student demonstrates competence in an outside area by accomplishing one of the following:
 - a. Completing requirements for a double major, or,
 - b. Completing five courses that together form a mutually coherent group—disciplinary or interdisciplinary—related to screen studies. At least three of the courses should be advanced. Courses forming the outside area will be chosen on the basis of consultation with and approval by the major adviser.

Note: The courses listed below are designated as lecture, discussion, and/or seminar. However, all screen studies courses include viewing of films and/or television programming. Students may be required to attend separate screening periods in addition to lecture, discussion, and/or seminar sessions.

101 INTRODUCTION TO SCREEN STUDIES/ Lecture, Discussion

Introduction to screen arts, with emphasis on critical thought and analysis. Special attention is paid to styles and forms used to organize image and sounds in individual works, and to critical analysis and theoretical argumentation with regard to the screen arts. Fulfills prerequisites for advanced screen studies courses.

Mr. Rosen, Staff

Offered every semester

120 HISTORY OF AMERICAN NARRATIVE FILM/ Lecture, Discussion

Intensive overview of the national cinema which has been strongest socially and economically, and which is also often regarded as the most influential in an aesthetic sense. Consideration of "Hollywood" film-making from social, economic, and aesthetic viewpoints.

Mr. Rosen

Offered every other year

121 SURVEY OF INTERNATIONAL FILM MOVEMENTS/ Lecture, Discussion

Broad survey designed to acquaint students with major foreign movements in cinema history. Includes readings on and screenings of examples selected from Italian silent epics, early Scandinavian cinema, German Expressionist and Weimar cinema, Soviet montage school, Soviet socialist realism, British documentary school, Nazi cinema, Italian neo-realism, Japanese classical cinema, French New Wave, post-New Wave political cinema, Third World cinema, New German cinema, various Eastern European schools.

Mr. Rosen Offered every other year

122 HISTORY OF BROADCASTING AND TELEVISION/ Lecture, Discussion

Overview of the history of the broadcast media, from the invention of radio through the development of the television networks and cable transmission. Attention is paid to typical programming characteristics, social implications of

broadcast materials, and the economic-industrial infrastructure of broadcasting.
Staff Offered every year

125 HISTORY OF GERMAN CINEMA

See listing under German 125.

135 HISPANIC CINEMA AND SOCIETY

See listing under Spanish 135.

150 MODERN GERMAN CINEMA

See listing under German 150.

155 STUDIES IN ITALIAN NEOREALISM

See listing under Comparative Literature 155.

160 FRENCH FILM

See listing under French 160.

205 FEMINIST FILM THEORY AND CRITICISM

See listing under Comparative Literature 205.

231 FILM THEORY/ Lecture, Seminar

Examines major works of film theory, both classical and contemporary. Readings are drawn from the work of Eisenstein, Bazin, Munsterburg, Arnheim, Burch, Benjamin, Adorno, Kracauer, Metz, Heath, Mulvey, Wollen, and others. Prerequisite: 101 or permission of instructor.

Mr. Rosen

Offered every other year

251 SOCIOLOGY OF MASS COMMUNICATIONS

See listing under Sociology 251.

290 ADVANCED PROBLEMS IN SCREEN STUDIES/ Seminar

Advanced studies of specific issues and approaches in the study of the screen arts. Topics vary each time the course is offered. Sample topics: Brechtian cinema; Eisenstein as theoretician, film maker, and historical figure; narrativizing the image in film and television; the idea of a national cinema and non-Western filmmaking. Students produce a major term paper. Prerequisite: 101 or permission of instructor.

Staff

Offered every other year

2991 DIRECTED READINGS

Staff

2995 SPECIAL PROJECTS

Staff

2999 INTERNSHIP

Staff

THEATER ARTS

PROGRAM FACULTY

Raymond J. Munro, M.A.H., *program director*: directing, acting theory
Neil R. Schroeder, Ph.D., *program director*: theater history and criticism,
modern drama, Ibsen, speech

PART - TIME FACULTY

Ann Janowsky, M.F.A.
Lauren J. Kurki, B.F.A.: scene and costume design, technical theater
Bonnie Zimering, M.F.A.

ADJUNCT FACULTY

James F. Beard Jr., Ph.D.
Kenneth Hughes, Ph.D.
Hartmut Kaiser, Ph.D.
Catherine Quick Spingler, M.A.
Michael K. Spingler, Ph.D.
Virginia Vaughan, Ph.D.

UNDERGRADUATE PROGRAM

Courses in theater arts—open to majors and nonmajors—provide students with a sound liberal education and prepare them for graduate school or professional theater. Each year, the program presents professionally-directed productions of classic and contemporary theater; although any Clark student may audition, students who take theater arts courses are required, as part of their course work, to participate in these productions. There are also opportunities for students to act and direct in classes, workshops, and student-sponsored productions, and to audition for Clark Center for Contemporary Performance productions.

The Clark Center for Contemporary Performance is a scholarly community of directors, composers, playwrights, choreographers, film/video makers, and critics devoted to the creation, development, and publication of contemporary works of art as well as to theoretical reflection about the works and their performance. The range of such work includes new scripts, original compositions or scores, translations, transformation of poetry into performance pieces, and explorations of the intersection of music, dance and video in the performance of existing works.

The center is designed to enhance the academic work of the University by organizing and focusing advanced learning through seminars and directed study in music, theater, film, design, literature, and aesthetics. Advanced students are encouraged to develop creative and theoretical projects within the center, so that they may take full advantage of the critical evaluation and supervision available, and enrich their educational experience through contact with faculty, other students, and outside artists and performing groups.

The theater arts major can concentrate in one of two areas: theater history and criticism, or performance and production.

The Theater Arts Major in History and Criticism consists of:

- 1) Required:
 - 110 *How Does a Play Work?*
 - One course in acting (usually T.A. 112)
 - One course in technical theater or design (usually T.A. 120)

151.1 *Theater in Western Civilization I*

151.2 *Theater in Western Civilization II*

2) At least four additional courses in theater history, dramatic literature, criticism, and aesthetics.

In addition, mastery of at least one foreign language is strongly recommended.

The Theater Arts Major in Performance and Production consists of:

1) Required:

112 *The Creative Actor*

113 *Actor as Thinker*

120 *Basic Technical Theater*

151.1 *Theater in Western Civilization I*

151.2 *Theater in Western Civilization II*

2) At least four courses from the following:

111 *Voice and Diction*

116 *Movement I*

117 *Advanced Movement for Theater*

219 *Directing Seminar*

213 *Studio* (may be repeated)

122 *Basic Technical Theater II*

123 *Design for the Theater* (may be repeated)

165 *French Play Production*

167 (Art-S) *Screen Production—Video*

Note: 111, 116, and 213 are required for actors and directors. In addition, it is suggested that students who are seriously interested in acting or directing attempt to master at least one foreign language.

COURSES

110 HOW DOES A PLAY WORK? CRITICAL ANALYSIS AND WRITING/ Lecture, Discussion (formerly 10)

Explores a small group of plays representing several styles, modes, and eras of Western drama, with special emphasis on formal analysis—study of the form and structure of each play. By means of class discussion, the oral interpretation of scenes from the plays, and the reading of critiques, which illustrate various critical approaches to the drama, the student will be encouraged to arrive at a personal evaluation of the plays. This course satisfies the *verbal expression* skill in the Program of Liberal Studies. No prerequisite. Several short papers.

Mr. Schroeder

Offered every year

111 VOICE AND DICTION/ Studio, Tutorial (formerly 11)

An intensified phonetic approach to articulation and voice production with some emphasis on speech for the stage and for public occasions. Each student is required to master the International Phonetic Alphabet to the point where it is an effective tool for ear training and articulation. Several laboratory sessions will be provided for the student to record and listen to his/her voice and for individual coaching by the instructor. No prerequisite.

Mr. Schroeder

Offered every other year

112 THE CREATIVE ACTOR/ Studio (formerly 12)

Through a series of workshops, the student becomes familiar with the basic tools necessary to the art of acting. The approach is based on the techniques of Stanislavski, Viola Spolin, Joseph Chaikin, Robert Cohen, and original exercises,

including an introduction to basic voice and movement for the actor. No prerequisite. Limited to 25.

Mr. Munro, Ms. Janowsky

Offered every semester

113 ACTOR AS THINKER/ Studio, Lecture, Discussion (formerly 13)

A conceptual approach to acting theory and its application. Through a series of lectures and exercises, the student develops a greater understanding of script analysis, characterization, style, and the relationship of the actor to the audience. A basic course for all students who intend to continue in acting and directing, and a prerequisite for the Studio and Directing Seminar courses. Prerequisite: 112. Limited to 15.

Mr. Munro

Offered every semester

116 STAGE MOVEMENT I/ Studio (formerly 16)

Students study the basic principles of stage movement techniques and extension of the emotional range of the body. Prerequisite: permission of instructor.

Ms. Zimering

Offered every year

117 ADVANCED MOVEMENT FOR THE THEATER/ Studio (formerly 17)

Students receive further development of stage movement technique, and work in rhythm and dynamics through involvement in choreographed selections. Styles of movement are studied. Prerequisite: permission of instructor.

Ms. Zimering

Offered every year

119 PUBLIC SPEAKING/ Studio (formerly 112)

Students are required to make as many speeches as time permits, so that they may master the fundamentals of public speaking, including the more common situations: presentation of information and persuasive speaking. No prerequisite.

Mr. Schroeder

Offered every year

120 BASIC TECHNICAL THEATER/ Studio, Lecture

Introduction to theatrical production. Techniques and organization involved in providing the stage with scenery, lights, and properties. Drafting of these elements is introduced, as well as scaled ground plans and other stage data. Makeup, lighting, and set construction in applied lab/crew requirements.

Ms. Kurki

Offered every year

122 TECHNICAL THEATER II/ Studio, Lecture

Continuation of 120. Beginning elements of design and styles of production. Basics of perspective and methods of pictorial representation. Continued focus on specific elements of scenery, lighting, and properties in relation to theater facilities, materials, and equipment. Lab/crew assignments. Prerequisite: 120 or permission of instructor.

Ms. Kurki

Offered every year

123 DESIGN FOR PERFORMANCE/ Studio, Tutorial

Theory of design/function of stage designer relating to production and to director. Historical research in styles of ornament and production. Student may register with emphasis on scenery, lighting, properties or costume/makeup design. Drafting required. Painting and rendering introduced. Lab/crew assignments. May be repeated for credit. Prerequisite: 120 and 122, or permission of instructor.

Ms. Kurki

Offered every year

151.1 THEATER IN WESTERN CIVILIZATION I/ Lecture, Discussion

A survey of theater and drama from ancient Greece to the Renaissance. The course considers the form and substance of theatrical presentations and the study of several representative plays from each important era and national theater. No prerequisite.

Mr. Schroeder

Offered every other year

151.2 THEATER IN WESTERN CIVILIZATION II/ Lecture, Discussion

A survey of theater and drama from the seventeenth century to the present, this is a continuation of 151.1. No prerequisite.

Mr. Schroeder

Offered every other year

154.1 MODERN DRAMA I/ Lecture, Discussion

A survey of Western drama and theater from Ibsen to World War II. The course traces the development of modern realistic drama and early experimental reactions to realism. No prerequisite. At least three papers or exams.

Mr. Schroeder

Offered every year

154.2 MODERN DRAMA II/ Lecture, Discussion

A survey of Western drama and theater from World War II to the present, which examines several of the major postwar movements and the radical dramatic forms they have produced. Course satisfies the *verbal expression* skill in the Program of Liberal Studies. No prerequisite. At least three papers or exams.

Mr. Schroeder

Offered every year

155 ENGLISH DRAMA

Refer to listing under English 122.

165 FRENCH DRAMATIC EXPRESSION

Refer to listing under Foreign Languages and Literatures.

Mr. Spingler

Offered every other year

213 STUDIO (formerly 113)

A scene study course applying methods, theories, and approaches discussed in *Actor as Thinker* to working on stage, film, and video. Students are required to present several scenes of different periods and styles for discussion, critical written review, and further development by classmates and director. The content varies each time the course is taught. May be repeated for credit. Lab and crew hours are required. Prerequisite: 113.

Mr. Munro, Ms. Janowsky

Offered every semester

219 DIRECTING SEMINAR (formerly 19)

Introduces the principles of directing for the stage through theory, practical application, and discussion. Students study problems of interpretation and concept; the role of the director as creative and interpretive artist; relationship to designer, stage manager, and actors. Additional lab time is required. Prerequisites: 113 and permission of instructor.

Mr. Munro

Offered every year

2991 DIRECTED READINGS

Staff

2995 SPECIAL PROJECTS

Staff

2999 INTERNSHIP

Staff

One or more, but not necessarily all, of the following may also be offered during 1986-87 and 1987-88.

164 THE AMERICAN MUSICAL THEATER/ Lecture, Discussion

While some attention is paid to the history of the musical theater in the United States, primary emphasis in this course is on the study and analysis of several important contemporary musicals, and on the form and structure of books, lyrics, and music. No prerequisite. At least three papers, exams, or creative projects.

Mr. Schroeder

185 TENNESSEE WILLIAMS/ Lecture, Discussion

An intensive study of the playwright's work concentrating on his development as an artist. Students evaluate his contribution to drama and literature through reading and analysis of his works. No prerequisite, but some experience in drama and literature is expected.

Mr. Schroeder

230 ELEMENTS OF DRAMA

Refer to course listing under Comparative Literature 165.

237 LANGUAGES OF THEATER

Refer to course listing under Comparative Literature 237.

286 IBSEN/ Seminar

An intensive study of the playwright's life and major works. Consideration is given to his development as an artist. Independent research and study is emphasized. Prerequisite: permission of instructor.

Mr. Schroeder

With permission of the program director, the following courses offered by other departments may be taken for theater history and criticism credit:

English 120 INTRODUCTION TO SHAKESPEARE

Refer to course listing under English.

English 254 ADVANCED SHAKESPEARE

Refer to course listing under English.

English 277 EUGENE O'NEILL/ Seminar

Refer to course listing under English.

French 255 THE MODERN FRENCH THEATER

Refer to course listing under Foreign Languages and Literatures.

German 127 DRAMATIC EXPRESSION IN GERMAN

Refer to course listing under Foreign Languages and Literatures.

German 138 MODERN GERMAN DRAMA

Refer to course listing under Foreign Languages and Literatures.

German 166 GERMAN DRAMA FROM LESSING TO EXPRESSIONISM

Refer to course listing under Foreign Languages and Literatures.

Women's Studies

PROGRAM FACULTY

- Sharon P. Krefetz, Ph.D., Government: *coordinator (1986—)* urban politics, suburban politics, women and politics
- Cynthia H. Enloe, Ph.D., Government, *coordinator (1981-86)*: women and politics, militarization, Asian and Black politics
- Rachel J. Falmagne, Ph.D., Psychology: logical cognition, logico-semantic development, women and psychology
- SunHee Kim Gertz, Ph.D., English: medieval literature, women in Medieval Europe
- Beverly Grier, Ph.D., Government: comparative politics, African politics
- Bonnie Grad, Ph.D., Visual and Performing Arts: nineteenth- and twentieth-century American and European painting, history of landscape art
- Susan E. Hanson, Ph.D., Geography: urban-social geography, transportation
- Serena S. Hilsinger, Ph.D., English: modernist literature, women writers
- Ruth Harriet Jacobs, Ph.D., Sociology: gender, theory, field methods, gerontology
- Jessica Jenner, Ph.D., Management: women and management, value organization and social psychology
- Dorothy Kaufmann, Ph.D., Foreign Languages: contemporary French feminism
- Linda Kennedy, Ph.D., Biology: neurobiology and physiology
- Judith List, Ph.D., Psychology: cognitive development, across the life span
- Gale Nigrosh, Ph.D., Foreign Languages: socio-linguistics, women's language and style
- Paul S. Ropp, Ph.D., History: women in China
- Christina Sommers, Ph.D., Philosophy: history of ethics, history of philosophy, contemporary moral theory
- Elizabeth A. Stanko, Ph.D., Sociology: women and crime, qualitative methodology
- Maren Stange, Ph.D., English: communications
- Barbara P. Thomas, Ph.D., International Development: community organization, women and public policy, rural development
- Roberta Tovey, Ph.D., English: Restoration and eighteenth-century literature, novel
- Virginia Vaughan, Ph.D., English: Shakespeare, Renaissance drama, Chaucer, medieval literature
- Andrea S. Walsh, Ph.D., Sociology: aging, women's studies, popular culture/mass communications
- Kristin Waters, Ph.D., Philosophy: ethics, social and political philosophy, history of philosophy, women's studies
- Walter W. Wright, Ph.D., Philosophy: nineteenth-century philosophy, ethics, philosophy of religion, German idealism

PROGRAM

Undergraduates may "concentrate" in women's studies, in addition to their regular major. Clark recognizes the appropriateness of offering courses that reflect the concerns of women from the perspective of different disciplines. Each year, courses that speak to the social and political roles and cultural formulations of women's and men's positions in society are offered in a number of departments. Interested students are encouraged to design a concentration to supplement their traditional disciplinary based majors. This will appear on their graduation transcript. The following sequence of courses comprises a concentration: *Introduction to Women's Studies*, two specialized women's studies courses, plus an

internship or independent project in women's studies.

Students also may self-design a major in women's studies.

The following is a partial list of Clark's women's studies course offerings; more information can be obtained from participating faculty or from the Women's Studies Office, AC 209.

COURSES

INTRODUCTION TO WOMEN'S STUDIES

Refer to course description under Sociology 110.

Ms. Walsh

COMPARATIVE POLITICS OF WOMEN

Refer to course description under Government 208.

Ms. Enloe, Ms. Grier

FICTION BY WOMEN WRITERS, 1688-1899

Refer to course description under English 133.

Ms. Hilsinger

MODERN FICTION BY WOMEN WRITERS

Refer to course description under English 134.

Ms. Hilsinger

VIRGINIA WOLF AND T.S. ELLIOT: THE MAJOR WORKS

Refer to course description under English 275.

Ms. Hilsinger

WOMEN AND PHILOSOPHY

Refer to course description under Philosophy 139.

Ms. Waters

ADVANCED TOPICS IN WOMEN AND PHILOSOPHY

Refer to course description under Philosophy 297.

Ms. Waters

MEDIEVAL LITERATURE: NARRATOLOGY

Refer to course description under English 150.

Ms. Gertz

WOMEN AND THE COMPARATIVE POLITICS OF LABOR/ Seminar

Refer to course description under Government 262.

Ms. Enloe

WOMEN AND POLITICS

Refer to course description under Government 175.

Ms. Krefetz

SOCIOLOGY OF WOMEN'S WORK

Refer to course description under Sociology 209.

Ms. Jacobs

WOMEN AND CRIME

Refer to course description under Sociology 210.

Ms. Stanko

SOCIOLOGY OF SEX ROLES

Refer to course description under Sociology 225.

Ms. Jacobs

THE FAMILY

Refer to course description under Sociology 255.

Staff

WOMEN AND MILITARIZATION/ Seminar

Refer to course description under Government 261.

Ms. Enloe

JANE AUSTEN

Refer to course description under English 261.

Ms. Tovey

WOMEN IN SOCIETY

Refer to course description under Psychology 249.

Ms. Joffe Falmagne

WOMEN AND SOCIAL CHANGE

Refer to course description under International Development 212.

Ms. Thomas

FIELDWORK SEMINAR IN WOMEN'S STUDIES

Refer to course description under Sociology 227.

Ms. Walsh

SEMINAR IN FEMINIST ISSUES

Staff

A HISTORY OF AMERICAN WOMEN

Refer to course description under History 219.

Staff

CHINESE WOMEN IN LITERATURE AND SOCIETY

Refer to course description under History 282.

Mr. Ropp

WOMEN WRITERS IN FRENCH LITERATURE

Refer to course description under French 185.

Ms. Kaufmann

Faculty

Members of the faculty and officers (appointed for the academic year as of July 1, 1986) are listed alphabetically with their titles, degrees, and years at Clark.

PRESIDENT

RICHARD P. TRAINA, Ph.D., President of the University. B.S., University of Santa Clara, 1958; M.A., University of California, Berkeley, 1960; Ph.D., 1960. (1984-)

EMERITI

HARRY C. ALLEN JR., Ph.D., Professor of Chemistry, Emeritus. B.S., Northeastern University, 1948; Sc.M., Brown University, 1949; Ph.D., University of Washington, 1951. (1969-86)

KARLO E. ANDERSON, Ph.D., Professor of English, Emeritus. A.B., Harvard University, 1927; A.M., 1928; Ph.D., 1942. (1945-76)

KARL J. R. ARNDT, Ph.D., Professor of German, Emeritus. (1950-1974)

RAYMOND E. BARBERA, Ph.D., Professor of Romance Languages, Emeritus. A.B., Brooklyn College, 1947; A.M., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)

ROBERT F. CAMPBELL, Ph.D., Professor of American History, Emeritus. A.B., Yale University, 1939; A.M., Columbia University, 1940; Ph.D., 1947. (1946-1957; 1960-)

WILLIAM H. CARTER JR., Ph.D., Professor of English, Emeritus. A.B., Middlebury College, 1936; A.M., Harvard University, 1938; Ph.D., 1951. (1949-1984)

PAUL S. CLARKSON, J.D., Curator, Emeritus. (1969-1979)

LYDIA P. COOK, B.S., Registrar, Emeritus. (1932-1966)

MORRIS H. COHEN, Ph.D., Professor of Government, Emeritus. A.B., University of Chicago, 1939; Ph.D., 1950. (1947-1984)

SAMUEL P. COWARDIN III, Ph.D., Associate Professor of Art History, Emeritus. A.B., Harvard University, 1943; A.M., 1948; Ph.D., 1963. (1949-86)

JESSIE C. CUNNINGHAM, Ph.D., Associate Professor of English, Emeritus. (1957-1975)

TAMARA DEMBO, Ph.D., Professor of Psychology, Emeritus. (1953-1972)

GEORGE E. HARGEST, M.B.A., Associate Professor of Economics, Emeritus. (1942-1971)

SHERMAN S. HAYDEN, Ph.D., Professor of International Relations, Emeritus. (1946-1973)

J. FANNIN KING, M.A., Associate Professor of Romance Languages, Emeritus. Adviser to International Students. A.B., Pomona College, 1936; A.M., Harvard University, 1937. (1946-1985)

DWIGHT E. LEE, Ph.D., L.H.D., Jacob and Frances Hiatt Professor of European History, Dean of the Graduate School, Emeritus. (1927-1967)

RAYMOND E. MURPHY, Ph.D., Professor of Economic Geography, Emeritus. (1946-1968)

RUDOLPH F. NUNNEMACHER, Ph.D., Professor of Biology, Emeritus. B.S., Kenyon College, 1934; A.M., Harvard University, 1935; Ph.D., 1938. (1939-1983)

J. RICHARD REID, Ph.D., Professor of Romance Languages, Emeritus. (1944-1976)

PERCY M. ROOPE, Ph.D., Professor of Physics, Emeritus. (1921-1962)
THEODORE H. VON LAUE, Ph.D., Jacob and Frances Hiatt Professor of History,
Emeritus. B.A., Princeton University, 1939; Ph.D., 1944. (1970-1983)

FACULTY AND OFFICERS OF INSTRUCTION

MARIA I. ACOSTA-CRUZ, Ph.D., Assistant Professor of Spanish. B.A., University of Puerto Rico-Mayaguez, 1978; M.A., State University of New York at Binghamton, 1980; Ph.D., 1984. (1986-)

VERNON AHMADJIAN, Ph.D., Professor of Biology. A.B., Clark University, 1952; A.M., 1956; Ph.D., Harvard University, 1960. (1959-1968; 1969-)

ELLIOT H. ALBERS, Ph.D., Affiliate Assistant Professor of Biology. B.A., University of Nebraska, 1974; M.S., Tulane University, 1978; Ph.D., 1979. (1986-)

MARILYN S. ALBERT, Ph.D., Assistant Professor of Psychology (Affiliate). B.A., Rochester University, 1963; M.A., McGill University, 1964; Ph.D., 1979. (1978-)

MARTIN ALBERT, M.D., Ph.D., Associate Professor of Psychology (Affiliate). M.D., Tufts University Medical School, 1963; Ph.D., University of Paris, 1971. (1980-)

MICHAEL P. ALEXANDER, Ph.D., Assistant Professor of Psychology (Affiliate). B.A., Rice University, 1968; M.D., Stanford University, 1972. (1977-)

ROY S. ANDERSEN, Ph.D., Professor of Physics. A.B., Clark University, 1943; A.M., Dartmouth College, 1948; Ph.D., Duke University, 1951. (1960-)

MORTIMER H. APPELEY, Ph.D., President, Emeritus; Professor of Psychology. B.S., The City College, New York, 1942; M.A., University of Denver, 1946; Ph.D., University of Michigan, 1950; D.Sc., York University, 1975; L.H.D., Northeastern University 1983; Litt. D., American International College, 1984; LL.D. Clark University, 1984. (1974-)

DOUGLAS M. ASTOLFI, Ph.D., Dean of the College. A.B., Tufts University, 1965; M.A., University of Rochester, 1967; Ph.D., Northern Illinois University, 1972. (1981-)

SANDRA T. AZAR, Ph.D., Assistant Professor of Psychology. B.A., Wheaton College, 1974; M.A., University of Rochester, 1982; Ph.D., 1984. (1986-)

ROBERT W. BAKER, Ph.D., Professor of Psychology; Director, Psychological Services Center. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)

STEPHEN A. BAKER, Ph.D., Assistant Professor of Economics. B.A., Trent Polytechnic, Nottingham, 1976; Ph.D., York University, England, 1981. (1981-)

RICHARD J. BARTKOWSKI, Ph.D., Assistant Professor of Accounting. B.S., King's College, 1973; Ph.D., University of Pittsburgh, 1982. (1984-)

DAVID M. BEAR, M.D., Assistant Professor of Psychology (Affiliate). B.A., Harvard University, 1965; M.D., Harvard Medical School, 1971. (1978-)

JAMES F. BEARD JR., Ph.D., Professor of English. A.B., Columbia College, 1940; A.M., Columbia University, 1941; Ph.D., Princeton University, 1949. (1955-)

EILEEN BERRY, Ph.D., Visiting Assistant Professor of International Development. B.A., University of London, 1952; M.A., Clark University, 1977; Ph.D., 1981.

LEONARD BERRY, Ph.D., Provost and Vice President for Academic Affairs, Professor of Geography. B.Sc., University of Bristol, 1951; M.Sc., 1956; Ph.D., 1969. (1969-)

ROGER BIBACE, Ph.D., Professor of Psychology. A.B., University of British Columbia, 1949; Ph.D., Clark University, 1957. (1957-)

- GEORGE A. BILLIAS, Ph.D., Jacob and Frances Hiatt Professor of American History. A.B., Bates College, 1948; A.M., Columbia University, 1949; Ph.D., 1958. (1962-)
- CHARLES S. BLINDERMAN, Ph.D., Professor of English, Adjunct Professor of Biology. A.B., New York University, 1952; A.M., 1953; Ph.D., Indiana University, 1957. (1962-)
- VAN BLUEMEL, Ph.D., Associate Professor of Physics (Affiliate). B.S., University of Michigan, 1955; M.S., University of Illinois, 1960; Ph.D., 1967. (1980-)
- JOHN BLYDENBURGH, Ph.D., Professor and Department Chair of Government and International Relations. B.A., Harpur College, 1965; Ph.D., University of Rochester, 1969. (1975-)
- ALFRED S. BOOTE, Ph.D., Visiting Assistant Professor of Marketing. B.A., Colgate University, 1951; M.B.A., Columbia University, 1953; M.A., Stanford University, 1957; M.Phil., Columbia University, 1974; Ph.D., 1975. (1985-)
- DANIEL R. BORG, Ph.D., Professor of European History. A.B., Gustavus Adolphus College, 1953; A.M., Yale University, 1957; Ph.D., 1963. (1961-)
- JEAN BORGATTI, Ph.D., Visiting Assistant Professor of Art History. B.A., Wellesley College, 1966; M.A., University of California, 1971; Ph.D., 1976. (1984-)
- MARTYN J. BOWDEN, Ph.D., Professor of Geography; Adjunct Professor of Comparative Literature. B.A., London University, 1957; M.A., University of Nebraska, 1959; Ph.D., University of California, Berkeley, 1967. (1964-)
- ROBERT C. BRADBURY, Ph.D., Associate Professor of Management. B.S., Holy Cross College, 1967; M.S. in Administration, George Washington University, 1971; M.S. in Preventive Medicine, Ohio State University, 1973; Ph.D., 1975. (1981-)
- DAVID R. BRALEY, M.A., M.Ed., School/University Liaison in Education. B.S.Ed., Worcester State College, 1962; M.Ed., 1967; M.A., Framingham State College, 1972. (1984-)
- DAEG S. BRENNER, Ph.D., Professor of Chemistry and Associate Provost. B.A., Rensselaer Polytechnic Institute; Ph.D., Massachusetts Institute of Technology, 1964. (1967-)
- JOHN J. BRINK, Ph.D., Professor of Biology. B.Sc., University of Orange Free State, 1955; B.Sc. (Hons), University of Witwatersrand, 1956; Ph.D., University of Vermont, 1962. (1966-)
- HALINA S. BROWN, Ph.D., Associate Professor of Environment, Technology and Society. B.Sc., Washington University, 1971; Ph.D., New York University, 1975. (1985-)
- JOHN C. BROWN, Ph.D., Assistant Professor of Economics. B.A., University of Wisconsin, 1978; M.A., University of Michigan, 1984; Ph.D., 1986. (1986-)
- ROBERT M. BROWN, Ph.D., Assistant Professor of Operations Management. B.A., Franklin and Marshall College, 1969; M.B.A., Northeastern University, 1972; Ph.D., University of Wisconsin-Madison, 1980. (1984-)
- SARAH D. BUIE, M.F.A., Assistant Professor of Graphic Design. B.S., Wellesley College, 1971; M.F.A., Yale University, 1978. (1981-)
- PAUL F. BURKE JR., Ph.D., Associate Professor of Classics, Adjunct in History. A.B., Stanford University, 1965; Ph.D., 1971. (1976-)
- ANNE BUTTIMER, Ph.D., Adjunct Professor of Geography. B.A., National University of Ireland, 1957; M.A., 1959; Ph.D., University of Washington, 1965. (1971-)
- MARCIA BUTZEL, Ph.D., Dana Assistant Professor of French. B.A., Bryn Mawr College, 1975; M.A., University of Iowa, 1977; Ph.D., 1984. (1984-)
- STUART W. CAMPBELL, Ph.D., University Archivist, Adjunct in History. B.A., Kenyon College, 1967; M.A. University of Delaware, 1978; Ph.D., 1978. (1978-)

- GERALD R. CASTONGUAY, Ph.D., Associate Professor of Music, Music Program Director. B.Mus., Boston University, 1959; M.Mus., Hartt College of Music, 1963; M.A., Harvard University, 1965; Ph.D., Rutgers University, 1975. (1970-)
- YOUNG M. CHAE, M.A., Instructor in Health Administration. B.S., Yonsei University, Korea, 1969; M.A., North Carolina State University, 1972; M.A. (statistics), 1975. (1982-)
- GARY N. CHAISON, Ph.D., Associate Professor of Management. B.B.A., Baruch College, 1966; M.B.A., 1967; Ph.D., State University of New York at Buffalo, 1972. (1981-)
- JON A. CHILINGERIAN, Ph.D., Assistant Professor of Management. B.A., Northeastern University, 1973; M.P.A., Northeastern University, 1975; Ph.D., Massachusetts Institute of Technology, 1986. (1986-)
- ARTHUR CHOU, Ph.D., Assistant Professor of Mathematics. B.Sc., Tunghai University, Taiwan, 1976; Ph.D., State University of New York at Stony Brook, 1982. (1982-)
- ROBERT A. CIOTONE, Ph.D., Assistant Professor of Psychology (Affiliate). B.A., Seton Hall University, 1963; M.A., University of Rochester, 1965; Ph.D., 1967. (1971-)
- LEONARD E. CIRILLO, Ph.D., Associate Professor of Psychology, B.A., City College of New York, 1958; M.A., Clark Associate Professor of Mathematics. B.S., California Institute of Technology, 1962; Ph.D., 1966. (1975-)
- EDWARD CLINE, Ph.D., Associate Professor of Mathematics. B.S., California Institute of Technology, 1962; Ph.D., 1966. (1975-)
- JEFFREY R. COHEN, Ph.D., Assistant Professor of Accounting. B.A., Bar Ilan University (Israel), 1976; M.B.A., Columbia University, 1981; Ph.D., University of Massachusetts, 1986. (1986-)
- M. MARGARET COMER, Ph.D., Associate Professor of Biology, Director of Biochemistry Program. A.B., Harvard University, 1964; Ph.D., Purdue University, 1972. (1976-)
- JOHN J. CONRON, Ph.D., Associate Professor of English, Adjunct Associate Professor of Comparative Literature, Adjunct Associate Professor of Art History and Criticism. Director of American Studies Program. A.B., Brown University, 1961; M.A., University of Michigan, 1966; Ph.D., 1970. (1977-)
- BRIAN J. COOK, Ph.D., Assistant Professor of Government. B.A., Cleveland State University, 1977; M.A., University of Maryland, 1982; Ph.D., 1984. (1984-)
- CLAYTON B. COOK, Ph.D., Affiliate Professor of Biology. B.A., Rutgers University, 1965; Ph.D., Duke University, 1970. (1986-)
- JOSEPH C. CURTIS, Ph.D., Professor of Biology. B.A., Cornell University, 1951; Ph.D., Brown University, 1960. (1963-)
- WILLIAM DAMON, Ph.D., Professor of Psychology and Dean of the Graduate School. B.A., Harvard University, 1967; Ph.D., University of California, Berkeley, 1973. (1973-)
- JOHN S. DAVIES, Ph.D., Associate Professor of Physics. B.S., University of Maryland, 1953; M.S., 1954; Ph.D., 1960. (1963-)
- JOSEPH deRIVERA, Ph.D., Professor of Psychology. B.A., Yale University, 1953; Ph.D., Stanford University, 1961. (1970-)
- PATRICK DERR, Ph.D., Associate Professor of Philosophy. B.A., Seattle University, 1972; Ph.D., University of Notre Dame, 1976. (1976-)
- CAROL C. D'LUGO, Ph.D., Visiting Assistant Professor of Spanish. B.A., Douglass College, 1965; M.A., University of Illinois, 1967; Ph.D., Brown University, 1983. (1984-)

- MARVIN A. D'LUGO, Ph.D., Associate Professor of Spanish, Chair of the Department of Foreign Languages and Literatures, Adjunct in Screen Studies. B.A., Brooklyn College, 1965; M.A., University of Illinois, 1967; Ph.D., 1969. (1972-)
- DANIEL DWORKIN, Ph.D., Research Associate Professor of Geography (Affiliate). B.A., Clark University, 1948; M.A., 1973; Ph.D., 1974. (1979-)
- J. RONALDEASTMAN, Ph.D., Visiting Assistant Professor of Geography. B.A., Bishop's University, 1971; M.A., Queen's University, Ontario, 1977; Ph.D., Boston University, 1982. (1981-)
- JAMES P. ELLIOTT, Ph.D., Associate Professor of English, Adjunct in Screen Studies. B.A., Stanford University, 1966; Ph.D., Indiana University, 1971. (1971-)
- JACQUE L. EMEL, Ph.D., Assistant Professor of Geography. B.A., University of Kansas, 1972; M.S., Pennsylvania State University, 1976; Ph.D., University of Arizona, 1983. (1984-)
- CYNTHIA ENLOE, Ph.D., Professor of Government and International Relations. B.A., Connecticut College, 1960; M.A., University of California, Berkeley, 1963; Ph.D., 1967. (1972-)
- KAREN L. ERICKSON, Ph.D., Professor of Chemistry. B.S., Siena Heights College, 1960; Ph.D., Purdue University, 1964. (1965-)
- MARIA FAFOUTI-MILENKOVIC, Ph.D., Research Associate in Psychology. B.A., Pierce College, 1970; M.A., University of Nottingham, England, 1973; Ph.D., Clark University, 1980. (1983-)
- RACHEL JOFFE FALMAGNE, Ph.D., Professor of Psychology. Licence in Psychological Sciences, University of Brussels, 1961; Docteur en Sciences Psychologiques, 1967. (1973-)
- WILLIAM R. FERGUSON, Ph.D., Associate Professor of Spanish. A.B., Harvard College, 1965; A.M., Harvard University, 1970; Ph.D., 1975. (1979-)
- RICHARD B. FORD, Ph.D., Associate Professor of Comparative History, Co-director of International Development and Social Change Program, Director of CENTED. B.A., Denison University, 1957; M.A.T., Yale University, 1959; Ph.D., University of Denver, 1966. (1968-)
- RONALD P. FORMISANO, Ph.D., Professor of American History, Adjunct Associate Professor of Government. B.A., Brown University, 1960; M.A., University of Wisconsin, 1962; Ph.D., Wayne State University, 1966. (1973-)
- THOMAS P. FRIEND, M.Ed., School/University Liaison in Education (Affiliate). B.S., Worcester State College, 1955; M.Ed., 1959. (1977-)
- WESLEY M. FULLER, M.Mus., Associate Professor of Music, Adjunct Associate Professor of Comparative Literature. B.Mus., Oberlin Conservatory of Music, 1953; M.Mus., Boston University, 1958. (1963-)
- SUNHEE KIM GERTZ, Ph.D., Assistant Professor of English. B.A., Carnegie-Mellon University, 1973; M.A., State University of New York, 1977; Ph.D., University of Chicago, 1983. (1985-)
- PETER P. GIL, Ph.D., Professor of Management. A.B., Harvard University, 1949; M.B.A., Harvard Business School, 1951; Ph.D., University of Geneva, 1963. (1981-)
- ROBERT L. GOBLE, Ph.D., Research Associate Professor of Environment, Technology and Society. B.A., Swarthmore College, 1962; Ph.D., University of Wisconsin, 1967. (1976-)
- JOSEPH H. GOLEC, Ph.D., Assistant Professor of Finance. B.A., Trinity College, 1980; M.A., Washington University, 1982; Ph.D., 1986. (1986-)
- HAROLD GOODGLASS, Ph.D., Professor of Psychology (Affiliate). A.B., College of the City of New York, 1939; A.M., New York University, 1948; Ph.D., University of Cincinnati, 1951. (1956-)

- HARVEY A. GOULD, Ph.D., Professor of Physics. B.A., University of California, Berkeley, 1960; Ph.D., 1966. (1971-)
- BONNIE LEE GRAD, Ph.D., Associate Professor of Art History. B.A., Cornell University, 1971; Ph.D., University of Virginia, 1977. (1977-)
- WAYNE B. GRAY, Ph.D., Dana Assistant Professor of Economics. A.B., Dartmouth College, 1977; M.A., Harvard University, 1979; Ph.D., 1983. (1984-)
- FREDERICK GREEN, Ph.D., Assistant Professor of Mathematics and Computer Science. B.S., Rensselaer Polytechnic Institute, 1973; M.S., Worcester Polytechnic Institute, 1979; Ph.D., Yale University, 1986. (1986-)
- FREDERICK T. GREENAWAY, Ph.D., Associate Professor of Chemistry. B.Sc., University of Canterbury, England, 1969; Ph.D., 1973. (1980-)
- BEVERLY GRIER, Ph.D., Visiting Assistant Professor of Government. M.A., Yale University, 1975; Ph.D., 1979. (1986-)
- STANFORD N. HAGOPIAN-GERBER, Ph.D., Associate Professor of Anthropology. B.A., University of Kansas City, 1955; M.A., 1957; Ph.D., University of Missouri, 1966. (1968-)
- PERRY O. HANSON III, Ph.D., Adjunct Associate Professor of Geography; Director, University Computing Center. B.A., Middlebury College, 1964; M.S., Northwestern University, 1969; Ph.D., 1972. (1983-)
- SUSAN E. HANSON, Ph.D., Associate Professor of Geography. A.B., Middlebury College, 1964; M.S., Northwestern University, 1969; Ph.D., 1973. (1981-)
- TAMARA K. HAREVEN, Ph.D., Professor of American History. B.A., Hebrew University, Jerusalem, 1960; M.A., University of Cincinnati, 1962; Ph.D., Ohio State University, 1965. (1969-)
- STANLEY R. HERWITZ, Ph.D., Assistant Professor of Geography. B.A., New College of the University of South Florida, 1977; M.A., University of California-Berkeley, 1979; Ph.D., Australian National University, Canberra, 1983. (1984-)
- SERENA S. HILSINGER, Ph.D., Professor of English. A.B., Douglass College, Rutgers University, 1959; Ph.D., University of Connecticut, 1964. (1962-)
- CHRISTOPH HOHENEMSER, Ph.D., Professor of Physics, Chair of the Environment, Technology and Society Program, CENED. B.A., Swarthmore College, 1958; Ph.D., Washington University, St. Louis, 1963. (1971-)
- GAIL A. HORNSTEIN, Ph.D., Research Associate in Psychology. B.S., University of Pittsburgh, 1972; M.A., Clark University, 1974; Ph.D., 1981. (1983-)
- DAVIS H. HOWES, Ph.D., Professor of Psychology (Affiliate). B.A., Yale University, 1946; Ph.D., Harvard University, 1951. (1974-)
- ROBERT C. HSU, Ph.D., Associate Professor of Economics. B.A., National Taiwan University, 1960; M.A., Atlanta University, 1963; Ph.D., University of California, Berkeley, 1970. (1971-)
- KENNETH HUGHES, Ph.D., Professor of German and Russian. B.A., Rutgers University, 1962; Ph.D., 1967. (1973-)
- PAUL T. INGLEFIELD, Ph.D., Research Associate Professor of Chemistry. B.Sc., University of Glasgow, 1962; Ph.D., University of British Columbia, 1967. (1984-)
- RUTH HARRIET JACOBS, Ph.D., Professor of Sociology, Chair of the Department of Sociology. B.S., Boston University, 1964; Ph.D., Brandeis University, 1969. (1982-)
- JESSICA R. JENNER, Ph.D., Assistant Professor of Management, Adjunct Assistant Professor of Psychology. B.S., Cornell University, 1960; M.A., Columbia University, 1977; Ph.D., 1981. (1980-)
- H. WILLIAM JOHANSEN, Ph.D., Professor of Biology. B.A., San Jose State College, 1955; M.A., San Francisco State College, 1961; Ph.D., University of California, Berkeley, 1966. (1968-)

- DOUGLAS L. JOHNSON, Ph.D., Associate Professor of Geography. B.A., Clark University, 1965; M.A., University of Chicago, 1968; Ph.D., 1971. (1973-)
- ALAN A. JONES, Ph.D., Professor of Chemistry, Chemistry Department Chair. B.A., Colgate University, 1966; Ph.D., University of Wisconsin, 1972. (1974-)
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A large, stylized, maroon watermark of the letters 'aca' is positioned diagonally across the right side of the cover, partially overlapping the university name.

CLARK UNIVERSITY

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